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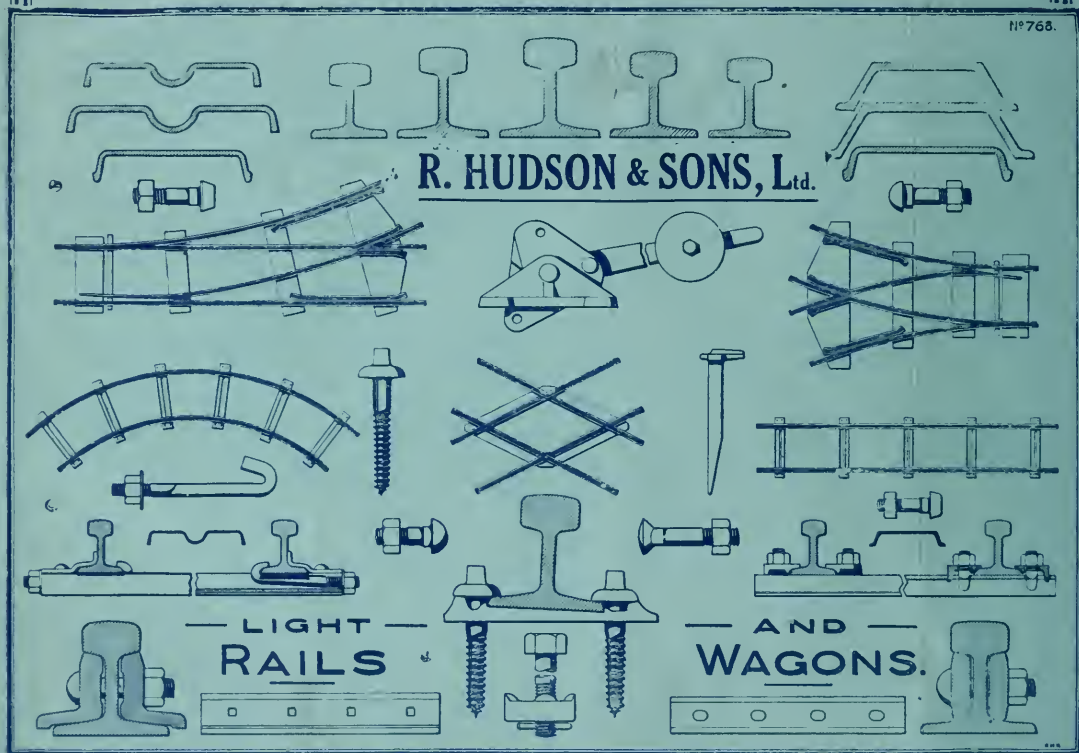
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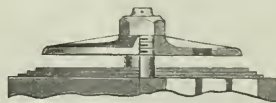
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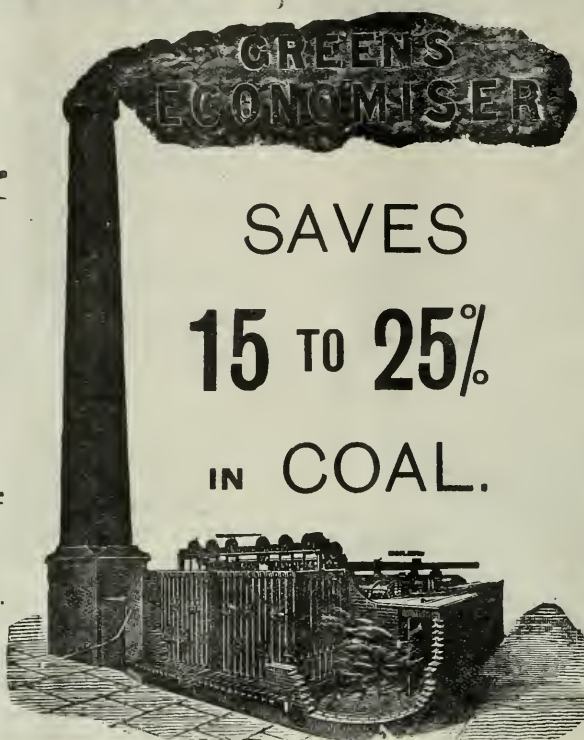
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CONTENTS.

PAGE

Notes and News	121
Topics of the Week:	
B.S.A. Company Meeting	123
Features of Mine Development	124
Far East Rand: Mr. Kotze's Report	125
Position and Prospects of Goerz & Co.	127
Year with the New Kleinfontein	129
Geology of S.W. Africa	130
Important Legal Decision	131
Rand Earth Tremors	133
Rhodesian Section:	
Rhodesian Mineral Output	134
The Week in the Sharemarket	137
Week in Mining Material Market	138
Company Meetings: East Rand Central; Pretoria Cement; Cor. Freeholds	140

Notes and News

With the omission of maps, tables and some details, the bulk of Mr. Kotze's report will be found in this issue. In a remarkable way it will be found to endorse and confirm the views so often expressed in this paper regarding the vital need for a start being made by the Government with the further development of the Far East. The money, we may repeat, is available, if only the Government relax the present onerous conditions imposed by and under the Gold Law. If the Government makes no move in this session, and if the sittings of the Select Committee merely result in more procrastination and delay, a grave injury may be done to the future of the industry. Nobody wants to embarrass the Ministry at this juncture, but now that the ground has been cleared and the Government shown by its own chief mining adviser what it should do, and why it should act at once, there is no earthly reason why it should still hesitate. With Mr. Kotze's report, which naturally errs on the conservative side, little fault, at first glance, can be found. Perhaps too little allowance is made for the fact that working costs on the Far East Rand are bound, in the future, to come down to a level that may considerably modify his estimates of the ore-contents of the district that may profitably be worked.

* * * *

The report of the Select Committee on Miners' Phthisis was laid on the table of the House of Assembly on Thursday, and a summary of its recommendations has appeared in the daily papers. Telegraphic summaries are open to so many inaccuracies that we withhold comment until the full text of the report, which we hope to print in our next issue, is available.

* * * *

The presentation of prizes to the winners of the competitions promoted by the "Safety First" Committee of the Rand Mutual Assurance Company, Ltd., was made on Thursday evening by Mr. E. A. Wallers, President of the Chamber of Mines. Mr. H. Newhouse, the Chairman of the "Safety First" Committee, presided over a large and representative attendance of mining men, comprising most of the mine managers of the Rand. A full report of the speeches and proceedings will appear in our next issue.

* * * *

Judging from the amount of correspondence received at this office, the public seems to be still groping in the dark as to the position of investors and holders of Daggafontein shares. On the 19th of February last we published in extenso the official statement, issued by the secretaries of the company, but as this is too lengthy for re-issue, and we take it that what investors require is to know exactly how they stand, the following details will probably prove sufficient: Old shareholders will receive one new share for each two of their original holdings. In addition they will be entitled to acquire any time during three years, an additional 50 shares at par for every hundred of the new shares held by them. The new shares representing the working capital, i.e., 100,000, will probably be issued within the next two months. But—and this must be carefully noted—though holders of the old shares are entitled to the conversion and benefits set out above, there is no guarantee whatever as to when the old shares will be exchanged for new.

* * * *

There has been no hitch in the presentation of Springs Mines Options, as out of the 315,000 in issue, only 6,900 have not been accounted for. These, doubtless, represent the number held in enemy territory on the Continent, and are little over 2 per cent. of the whole.

The enormous increase in the native labour supply is shown in a striking way in the February returns of the Mines Department, where it appears that in that month the average number of natives employed in the various producing gold mines of the Transvaal was 224,338 compared with 180,641 in January, 1915, a difference of 43,697, or nearly 25 per cent. A notable increase has been observed at coal mines, but only quite recently. During the next few months, in accordance with the usual custom, a falling off may be expected, but obviously the tendency is for the native labour supply to augment itself at a greater rate than during previous years.

The explosives industry has been expanding at a rapid rate during the past twelve months, and is now thriving luxuriantly. At the beginning of 1915 some 61,548 cases were manufactured in a month, whereas during March no fewer than 86,054 cases were produced locally. Much is due to the export trade in gelignite, which has grown from 641 cases in March, 1914, to 15,468 cases during March, 1915. Gelatine and dynamite exported have increased from 115 and 178 cases respectively to 3,222 and 4,270 during the same period. While only 110,000 detonators were imported in March, 1914, no less than 4,840,000 were imported last month. The war has thus not proved to be altogether disadvantageous to local effort.

The judgment delivered last week by Mr. Pienaar, the Barberton Resident Magistrate, a full report of which we give in this issue, is of much importance. An appeal, we understand, has been registered, and the case will be carried to the Supreme Court. No matter what the decision of the higher court may be, the taxpayer will feel that the Gold Act of 1908, in all its sense and meaning is wholly inadequate to the various incidents and exigencies of present day mining in this country. The case further strengthens the cry for the reform of the Gold Law.

At the annual meeting in May last year Sir Lionel Phillips, in dealing with the value of the shares, made a suggestion in regard to steps that might be taken towards reorganising the capital previous to the resumption of dividend payments. In January the question again came under discussion, but no official statement could be made on the subject because the result of the year's operations was not known. Presumably a grasp of the position is now possible, for the subject is again being broached. The annual meeting should be held shortly, and it is hoped that Sir Lionel Phillips will be in London in time to preside.

The last annual reports of the Consulting Engineer and Manager of the Leeuwpoot Tin Mines give some interesting details with regard to the operations of the past year. It may be added that the average milling grade of the ore treated was somewhat higher during the year, although still a little more than 20 per cent. lower than that milled by the Rooiberg during its last financial year. Comparing results of these two mines from data supplied by the latest annual reports of each, the Leeuwpoot data being therefore by six months more recent than the other, the figures appear as shown:—

	Grade Ore Treated, % Met. Tin.	Av. Grade Concentrates % Met. Tin.	Average Recovery %
Leeuwpoot	2.25	63.43	74.58
Rooiberg	2.82	69.28	78.27

As things stand so far, it appears that the Rooiberg recovery is a little ahead of that at Leeuwpoot. In both cases plant is, or has been, under construction for the purpose of improving upon the concentration as far as possible, so that it is somewhat too early as yet to make any very close comparisons between the operations of the two companies. It is gratifying to find that the Leeuwpoot working costs, includ-

ing realisation charges, amounting to 6s. 8.38d., and development redemption costs equal to 4s. 11.096d. per ton milled, do not exceed 24s. 2.073d. per ton milled, a figure which, in the circumstances does excellent credit to the management and technical control. A great deal of care has been taken with regard to the valuation of the ore reserves. As has been pointed out in connection with the Rooiberg and Zaaiplaats mines, the process of valuation with regard to these base metal occurrences is particularly difficult, and only after long experience and careful study of the vagaries of the ore bodies can an approximately reliable estimate be formed of the percentage of tin in the lodes and their ultimate surroundings. The reserves at Leeuwpoot have been realised in the light of past results, and it is reported that there are 107,160 tons in sight, of an average value of 2.14 per cent. metallic tin. It may be taken that the figures are well on the conservative side. They represent, roughly, on last year's basis, more than sufficient to supply the mill for the next two years. It may be added that a large tonnage of good ore which will not be likely to be used for a long time to come, has been eliminated from the calculation. The crushing output of the mill will be increased shortly, when the new plant is ready to receive the additional material.

The improvement in the Goerz balance sheet for 1915—appearing elsewhere in this issue—as compared with the two preceding years, is certainly deserving of attention, and on the present occasion, so far from the report containing a reference to depreciation, it has the following: “The holdings of shares and debentures and sundry participations and interests, taken at the market prices of December 31 last, or at the directors’ valuation, in cases where no market price exists, had a value in the aggregate in excess of the book cost.” In 1914 a sum of £193,920 was written off, mainly in respect of depreciation on certain of the company’s holdings of shares and debentures in other companies, and the reserve account of £160,000 was transferred to profit and loss account in order to meet this. The present position, therefore, seems to be that some of the depreciation already written off has now been recovered. Here is a comparison of figures for the past three years:—

	1915.	1914.	1913.
Realised profits on sales	£30,818	£4,968	£1,368
Dividends and interest	30,054	19,610	20,226
Miscellaneous	3,460	3,358	3,063
Total income	£64,332	£27,936	£24,657
Salaries, less fees received	£12,942	£16,371	£24,983
Other expenses	11,545	11,800	14,337
Total expenses	£24,487	£28,231	£39,320
Balance	£39,845	- £296	- £14,663

It will be noticed that the company has disposed of some of its shares and made, in fact, quite a respectable profit, the figures of 1914 and 1913 referring to the same items looking very poverty-stricken in comparison. While a substantial augmentation in the dividend total is exhibited on account of last year, it is certain that the amount would have reached a much higher level had the December disbursements of the Geduld and the Modder Deep, to which A. Goerz & Co. is entitled, been included. These amounts will, in consequence, figure in the profit and loss account in respect of the current year's operations. It will be noticed that management expenses have undergone a very substantial reduction. Efficiency is not likely to have been impaired; the probability is that much of the saving was effected in connection with the offices in Mexico and in Berlin. To economise to the extent of over 50 per cent. in two years is a distinctly creditable performance, despite the troubles that may have contributed towards the enforcing of the savings. So far as can be seen, fees received were not larger last year than in 1914 or 1913. The year's credit balance of £39,845 is in marked contrast to the deficiency of £296 in 1914 and the shortage of £14,663 in the preceding year.

The news that another lead mine in the Pretoria district may be opened lends interest to the position of the metal. According to latest advices, there has not been much change in the London general position of pig lead lately, although the price rose considerably further up to about £36 10s., a new high record, notwithstanding the recent Government prohibition of speculative dealings. Under the new regulations pig lead is, of course, no longer a free market, so that the present state of comparative scarcity is having, if anything, the more effect upon the trend of prices whenever the demand assumes some importance. The view at any rate, is generally expressed by dealers that the authorities would have been wiser by not interfering with the market. The price of foreign lead now stands near £31 15s. usual London terms ex ship Thames, which is not much less than 100 per cent. above the normal figure in peace times, but so far as can be gathered, there is not room for a big fall in the price until the quantities diverted to England are more commensurate with the size of the abnormally heavy current requirements, chiefly in connection with munition work. There is no indication of an improvement in the latter direction, for the present at any rate, while the situation is aggravated by a multitude of adverse circumstances. The chief of these is undoubtedly the pronounced spell of stringency which has been developing across the Atlantic, where values have been up to something like £40.

* * * *

The report of the British South African Explosives Company (Modderfontein) for 1915 shows that the profits amounted to £55,997. A dividend of 7½ per cent. is declared. The directors state that orders from Overseas partly acted as an offset against the deficiency in the sales in the Transvaal.

* * * *

The progress report of the Messina technical committee for the quarter to December 31 is as follows:

Position of the Messina. Vogelzang: Prospect shaft at Harper workings timbered, and No. 1 level station completed. Both N. and S. drives at this level extended beyond assumed position of lode, and crosscuts put out. No ore found and sinking will be resumed. At Campbell workings incline shaft sunk through old fill at one end of extensive ancient workings. No ore found in shaft, and cross-cutting and driving will be started. Total development footage at Vogelzang, 234 ft. Messina: Some prospecting done in E. and W. sections, but the more important development work confined to central section. Total footage, 1,837 ft., or 612 ft. per month exclusive of shaft sinking. With exception of ore exposed in the S. lode on No. 2 level, and the No. 11 winze shaft stope number 1—1,620 E., no new lodes or ore bodies developed. Below 10th level the Bonanza hanging-wall lode has been disappointing. Winze from level No. 10 now in granite, and 11th level shows no ore at all on this lode. Crosscut on level No. 13 not yet reached position of ore body. Ore broken in stoping, 29,446 wet long tons; ore produced, (Messina), 28,156 wet long tons; dry tons produced, 27,624; assay copper, 5.54; dry tons copper, 1,531.653. Since exhaustion of old jig middlings, smelter has been used entirely to smelt second-grade mill products, producing therefrom a 55 per cent. matte. This arrangement admits of working of old dumps, owing to present high price of copper. Total production of shipping products: Hand-picked ore, mill dry tons, 232,715, assay per cent. cu. 18.28; shipping concentrates, dry tons 2,492.5, assay per cent. cu. 42.69; matte, dry tons 464.0, assay per cent. cu. 58.11. Products in transit and at mine on January 1: 425,977 tons, 40.97 per cent. copper, matte 106,429 tons, 59.00 per cent. copper; total, 532,406 tons, 44.58 per cent. copper. White labour, owing to enlistments for both German East Africa and overseas, becoming scarce. A great scarcity of supplies, and shipments very irregular. A considerable amount of new construction work done for all different departments. Output for Messina coal mine at Lilliput for quarter, 3,541 tons. The coal is used exclusively for smelting.

TOPICS OF THE WEEK.

RHODESIAN MINING AND ECONOMIC PROGRESS.

SOME notable facts reflecting the mining and economic progress of Rhodesia were contained in the speeches made at the annual meeting of the British South Africa Company held in London the other day. In our recent review of the annual report of the company it was shown that if the financial position of the Chartered Company was, owing to a variety of reasons, still disappointing, the mining interests of the Company were in a flourishing condition. Mining is, of course, still the premier industry of Rhodesia. Gold, copper, chrome-iron ore, asbestos, and coal all show an increased output. It is true that the mines have had to pay higher prices for mining requirements, but against that labour has been abundant and obtainable at lower rates of pay. The monthly returns of gold production in Southern Rhodesia contain very satisfactory evidence in regard to the condition of the industry. In February, 1914, the total value of gold produced was £259,888, the number of producers was 209. The comparative figures for February, 1915, were—value £286,789, producers 194; and for February, 1916, value £313,769, producers 217. It is quite evident from these figures that there has been no setback. What the mineral estate of the Chartered Company is really worth at the present time was shown by Mr. Birchenough. Revenue from minerals for the year ended March 31, 1915, was £91,709, and there is no reason to believe that it was less during the financial year just ended. Revenue from dividends on shares held in Rhodesian mining companies now stands at about £23,000 per annum, and, in addition, there is the £658,000 which in former years was received from sales of Rhodesian shares and debentures taken in commutation of mining rights. The amount so received has been invested in the business, and must, for the present purpose, be taken to be carrying, say, 5 per cent. interest. Adding these amounts together, it will be seen, in its present early stage of development, the Chartered Company's mineral estate is worth about £148,000 per annum. "That revenue is good and hopeful so far as it goes," said Mr. Birchenough, "but we have long realised that if a gigantic concern such as this is ever to give the shareholders the returns which they have a right to expect, its total income must be derived from many sources, some of which may be relatively unimportant, but which will, in the aggregate, give a satisfactory revenue. For some years to come our mining revenue will remain our largest single source of income, but we venture to hope that it will be rivalled in course of time by the receipt from our railway interests, our land, our ranches, and our citrus estates." Then again, the railways are paying their way. They have funds in hand sufficient to meet any capital requirements for some time to come, and in certain important directions they have the invaluable support and assistance of the Beit Railway trustees. The immediate prospects of traffic to and from the Katanga district in the Belgian Congo and the mineral areas in Northern Rhodesia are most promising, and fully justify the policy of the Chartered Company in pushing their railway extension northward, and ever northward. When normal conditions are once more established the Rhodesia Railways Trust will doubtless resume the payment of dividends, and the large holding in that company will become a regular and increasing source of revenue. In reviewing the company's financial resources, Mr. Birchenough showed that the sum of £1,265,000 is the first line, but there were also important investments in reserve not up to the present included in the list of first-class securities, though they are rapidly approaching this standard. Take, for instance, the large interest in preference shares of the Victoria Falls and Rand Power Company, which have been freely dealt in lately at improving prices up to about 18s. Regarding this, Mr. Birchenough said: "The Power Company is now firmly established on the Rand; it is indeed one of the most successful power companies in the world; its business is widespread and extending, its monthly returns are large and progressive, and satisfactory dividends are

being regularly paid on these preference shares. Take again our large holding in the Wankie Coal Company, representing at present prices a value of £310,957. On these shares we are in regular receipt of dividends at the rate of 12½ per cent. per annum. The company owns one of the finest coal-fields in the world, and its business is rapidly expanding, mainly owing to the extension of the copper-mining industry in the Belgian Congo." Mr. Birchenough concluded with a striking expression of faith in the position of the Company.

"Our credit is upon an entirely satisfactory basis," he said, "and we have not had occasion to make any new demands upon it. Our relatively small issue of £1,250,000 debentures is the only permanent charge upon our undertaking, and we have not contracted any temporary loans. As regards other companies operating in Rhodesia, I can say generally that, looking at the position as a whole, their financial outlook is encouraging. It is a striking fact, which bears eloquent testimony to the truth of this statement, that the amount paid out of earnings by Rhodesian companies during 1915 in respect of dividends and debenture interest was approximately £1,250,000. Notwithstanding the war a distinct advance can be recorded in almost every leading branch of Rhodesian industry. Our organisation is working well, and we face the future with feelings of faith and confidence, founded upon knowledge of our secure financial position and of the proved wealth and resources of Rhodesia. Even if the war should last another full year, and if our revenue should not expand beyond the figure of the present year, a careful calculation convinces us that we shall not make any larger inroad upon our liquid resources than we made in the year that is past."

FEATURES OF MINE DEVELOPMENT

DURING the year 1915 the development upon the producing mines of the Rand, according to the statistics of the Mines Department, amounted to 471,778 feet in main drives and crosscuts, 18,804 feet of main shaft sinking, and 266,657 feet of other development of a secondary and temporary kind. The comparison of these figures with those of preceding years, as shown in the accompanying table, is of some interest:—

Year.	Main Drives and Cross-cuts, feet.	Main Shafts, feet.	Other Development, feet.
1908-9	477,675	28,770	225,737
1909-10	464,606	32,226	232,569
1911	504,718	31,442	294,498
1912	454,765	26,324	282,957
1913	433,218	21,981	268,445
1914	407,483	19,907	232,417
1915	471,778	18,804	266,657

During this period the quantity of ore milled increased from 20,548,759 tons in 1909 to 28,314,539 tons in 1915, so that it would appear at a glance that development has not been proceeding at an equal rate with exhaustion, even when the enormous excess tonnages such as those of the Government Areas and Modder Deep, for example, are thrown into the scale. To make a more detailed examination of the position, the ore reserve statements covering the last three years may be taken into consideration. In our brief review of the ore reserves declared in the last annual reports to hand, which appeared in our last issue, it was shown that excluding the Village Main Reef and the Robinson Deep there were some 91,509,869 tons of ore in sight in the producing mines of the Rand. If we add 1,878,000 tons for the Robinson Deep, and neglect the Village Main, the total amounts to 93,387,869. At the end of 1913 the ore reserves of the producing companies, not including the Vogelstruis Estates, West Rand Central, and Durban Roodepoort, for which we have not the figures at hand, were 89,224,171 tons. If we deduct the reserves of the same three companies from the 1915 figures, we have an amount of 92,560,201 tons, or a balance in favour of last year of 3,336,030 tons. As a matter of fact, then, in spite of the heavy drain upon the ore reserves as a consequence of increased crushing during the last two years, amounting to no less, say, than 2,300,000 tons for the companies on our list, development has gained on depletion to the extent of about 3½ million tons over the period under review. This represents an average gain of 1½ million tons per annum, or a little over six per cent. on the total quantity crushed. In view of the fact that the past year has been an excep-

tionally good one from the point of view of labour supply, the excess development is inconsiderable. The whole question of development is undoubtedly affected to a great extent by the operation of the Mining Taxation Act of 1910, which permits companies to debit so much of their development charges to working costs, in each year, as are represented by a tonnage equal in amount to that used up in milling operations. All development costs over and above this amount are debited to capital account, and so become subject to the allowance for amortization only. For example, if a company incurs expenditure on so-called excess development amounting to £100,000 in any one year and has taxable working profits for the same period amounting to £500,000 it is not permitted to debit this sum of £100,000 to working costs and by so doing to reduce the profits, on paper, to £400,000. If the life of the mine is, say, 20 years, the amount of £100,000 would be amortized, at three per cent. compound interest, by an annual sum of £3,721 12s. This sum only may be deducted, on account of the item of development, from the £500,000 profits, leaving a balance of £496,278 8s. upon which the 10 per cent. profits tax is payable: that is to say, without taking into account other similar deductions that might be allowed on account of other capital expenditure. On the other hand, by debiting the whole amount of £100,000 to working costs the sum liable to taxation would be only £400,000. Some companies were not slow to perceive, and act upon, this method of dealing with the profits tax problem, before the regulation concerning excess development came into force, and obviously the Treasury were equally quick in perceiving the disadvantages of the position. In a letter dated the 9th August, 1912, which was addressed by the Chamber of Mines to the Hon. the Minister of Finance, the President of the Chamber of Mines remarked, *inter alia*:—"As already stated in my letter of the 10th February last, the Chamber understands that the reason for altering the Profits Tax (Gold Mines) Proclamation, 1902, in regard to development, was that some companies performed more development than the Government considered necessary, thus temporarily postponing the share of profit which the Government would otherwise immediately obtain, etc." The Chamber recognised that there was justification for an alteration of the law to meet this state of things, but it was objected that while extra development was debited to capital account for purposes of taxation, it was not allowed to credit to the same account a sum representing a shortfall in normal development, in such a way that past debits might be counterbalanced. At the same time, however, such a shortfall could be carried forward against future excess expenditure. It was felt that this was an anomalous and absurd condition, and a great deal of correspondence and discussion was occupied in obtaining the removal of this defect in the carrying out of the Act. From the last annual report of the Chamber of Mines it would appear that the Chamber has succeeded in its efforts, for in a revised statement of the particulars relating to developments required by the Treasury it is said that "in case of shortfall of development, the shortfall may be carried forward for set-off against any future excess, or it may be claimed against any excess which has been reckoned as such under the existing law." Obviously the whole question is beset with difficulties. On the one hand there is the perfectly valid objection that the Act "penalises the company desirous of building up ore reserves, the creation of which contributes greatly to the stability of the gold mining industry," while on the other there is the perfectly natural desire of the Government not to be balked of what it considers to be legitimate revenue. It can scarcely be doubted that the penalty against excess development has had a material bearing upon the figures presented in the first part of this article. At the same time it cannot be held to be altogether responsible for the very moderate rate at which the reserves of the Rand are being accumulated. What has to be mainly considered in the matter, is not the working of the Mining Taxation Act, but the actual cost of the work of development while shareholders expect dividends to be maintained year after year at a normal level. Big dividends and large and adequate capital expenditure are mutually obstructive conditions which require very thoughtful adjustment in existing circumstances.

FAR EAST RAND.—MR. KOTZE'S REPORT.

Development "A Matter of Urgency"—Exhaustive Analysis of Productive Value of the Area—Estimates of Capital Requirements—Gold Law Reforms Necessary.

THE report prepared by the Government Mining Engineer, Mr. J. N. Kotze, on the Far East Rand at the request of the Government, has been submitted to the Select Committee on the Far East, and is now published. The following extracts cover most of the important points:—

Position of Far East Rand.—The reef-bearing land usually referred to under the term "The Far East Rand," will for the purposes of this Memorandum be taken to include all ground containing the Main Reef Series, and situated east and south-east of, and including the farms Rietfontein No. 11 and Witpoortje No. 12, and extending up to the limits of the outcrop and sub-outcrop of the Main Reef Series. In an east—west direction, this area extends (vide accompanying Map No. 1), over a distance of about twenty miles from a point south of Boksburg to a point just west of Endicott Station, and in a northerly and southerly direction over a distance of twenty-two miles from Nigel to a point seven and a half miles north of Welgedacht Station. The reef-bearing area has an extent of 247 square miles, or about 107,140 claims, and is traversed in its northern half by three Government railway lines, namely, the Boksburg-Springs-Ernelo line, the Apex-Welgedacht-Witbank line, and the loopline between Dunsward Junction and Welgedacht. Numerous private sidings run from these main lines to different points on the various mines. At its southern extremity, the Nigel Mines lie six miles north-east of Nigel Station on the Germiston-Heidelberg line.

Practically a Basin.—Although not geologically a basin, this section of the Witwatersrand may for practical purposes be considered as such, since the reef has an outcrop or sub-outcrop on all sides of it excepting the west, where it merges into the general southerly dip of the Witwatersrand formation with an undefined southern limit. The area has within the last few years been included in a detailed survey of the Witwatersrand area by the Geological Survey staff. The only reef series which can at present be considered of economic value is that correlated with the Main Reef Series.

Depths of Reef.—It is estimated from information obtained from mining and boring operations that over 203 square miles, equivalent to 88,191 claims, of the area, the reef lies at a depth less than 5,000 feet, and that the only portion in which it possibly occurs at a depth of over 7,000 feet is in the south-west corner of Witbok No. 149. The depths at which the reef has occurred, and may be expected to occur, are shown by the depth contour lines on Map No. 1. Although it is somewhat doubtful whether reef situated at a vertical depth of over 5,000 feet, with the information at present available, should not be excluded as unprofitable, ground falling within the area considered and containing reef in excess of that depth has been included in the discussion.

Of the total area of 64,863 claims, the portion containing reef at a vertical depth of less than 5,000 feet accounts for 48,396 claims. Of the balance, 9,836 claims are estimated to have reef at depths between 5,000 and 6,000 feet, and 6,631 claims over 6,000 feet. It is possible that the reef within a small area in the south-west portion of Witbok 149 may be slightly over 7,000 feet deep.

Unproclaimed Farms. Ground Held Under Mining Title.—Of these unproclaimed farms, the only ground held under mining title is that belonging to the Springs Mines on De Rietfontein 14, in extent 1,332 claims, and the ground held as Vergunning claims by the Marievale Nigel on Holgatfontein 127, in extent 20 claims, of which 12 are estimated to be reef-bearing.

Unproclaimed Farms. Shaft Sinking.—Shaft sinking has been carried on on:—Daggfontein 25, Grootvlei 26, and Klipfontein 22, by the owners of the farms, but they have not yet secured mining title for the ground they intend to choose in view of their rights as owners.

Unproclaimed Farms. Areas for Leasing.—The areas available for leasing on these farms after proclamation will be the balance left after the choice exercised by the owner in selecting his discovery claims and his minepact under sections 19 (1) and 20 (1) of Act No. 35 of 1908, which matter is dealt with in more detail in section 40 of this memorandum. Under the existing law, roughly three-quarters of the ground to be proclaimed would be available for leasing by the Government.

Future Capital Requirements.—From the foregoing it will be seen that the reef-bearing area may be classified into the following sub-divisions:—(a) Held by existing producing companies, 11,203 claims, (b) held on proclaimed land by companies or individuals and requiring further capital for development and exploitation, 10,246 claims, (c) open for pegging, 1,286 claims, (d) reserved from pegging and available for leasing under Sections 16 and 52, 16,842 claims, (e) held under mining title on unproclaimed land, 1,344 claims, (f) not held under mining title on unproclaimed land, 63,519 claims; total, 107,140 claims. The existing producing companies may be looked upon broadly as being already adequately provided with capital. The balance of the ground, having an area of 93,237 claims (of which 19,219 claims are over 5,000 feet in vertical depth), will require capital for its development and exploitation. For a working company, this may be roughly estimated at about £1,000 per claim, but a large allowance for certain sections which may never prove sufficiently attractive to capital must be made. Roughly it may be stated that capital to the extent of about £50,000,000 will be needed. This amount will naturally be spread over a number of years, for it is obvious that caution must necessarily be exercised in the opening up of new ground, in order to minimise the heavy losses inseparable in proceeding from proved to unproved territory, and that a prudent financial policy will discourage the taking of too long leaps in the dark. From the summary given in the preceding paragraph it will appear that there are now available for leasing on proclaimed ground a total area of 16,842 claims. When the balance of the reef-bearing land is proclaimed, amounting to 64,863 claims, about three-quarters of it, or about 48,000 claims will become available for leasing, bringing the total approximately to 65,000 claims, of which 49,200 claims contain reef at a depth of less than 5,000 feet.

Dip.—The dip of the reef over almost all this area is slight, and there are portions of it of considerable extent in which it averages about 8 degrees. The locality where steeper dips obtain is in the north-western portion of the area, where it averages about 70 degrees at the Van Ryn and of 60 degrees at the eastern section of the New Kleinfontein exist. These steep dips rapidly flatten, and in the neighbouring properties of the Apex section of the New Kleinfontein, the Van Dyk, the Rand Collieries, the dip averages 20 degrees, and in the New Modderfontein 22 degrees. At the southern extremity of the area the dip varies from 20 degrees at outcrop in the Nigel to 12 degrees in the lower levels of the Sub-Nigel. The average dip of the unexplored area may be assumed to be 7 degrees.

Stoping Widths.—Mining and boring operations have shown that over almost the whole area only one reef has been or is likely to be worked. The portion in which this condition does not obtain is that comprised by the Van Ryn, in which mine as many as four reefs have in places been worked in separate stopes one above the other with partings of a few feet, and the Kleinfontein section of the New Kleinfontein, where three reefs have in places been worked in separate stopes one above the other with partings of a few feet. In these mines, as well as in the New Modderfontein, a reef known as the South or Modderfontein Reef, lying 470 feet (true thickness), above the Main Reef, has been worked to a small extent. For purposes of estimating probabilities in the unexplored areas, an average stoping width of 4½ feet will be assumed.

Unpayable Zones.—In most mines there exist non-productive areas from which no ore is obtained, either because it has never been deposited, or has been cut out through faulting or the intrusion of dykes, or is required to be left for purposes of safety, or is of so narrow a width, or so low a value as to be unpayable. The proportion of these non-productive areas is smaller in the outcrop mines in the north-west portion of the area. The percentage of non-productive area varies from 15 to 80 per cent. in different mines, on the basis of the existing relations between recovery and costs. In estimating the possibilities of the ground still to be worked, 60 per cent. of any area to be worked will be assumed as non-productive. This assumption will naturally be too optimistic in certain cases, and too drastic in others. While there are indications that the poorer ground lies in certain directions, our present day knowledge

of the conditions does not permit any clear line of demarcation between payable and unpayable areas. Further exploration will in time no doubt indicate the promising sections more definitely.

Factors Determining Areas Required for Mining Leases.

—It is laid down in Section 46 of Act 35 of 1908, that the area to be leased shall constitute a workable mining proposition. In determining the minimum size of such an area, many factors have to be taken into consideration, and a fairly liberal margin must be allowed, for otherwise the proposition becomes unattractive. An error on the large side makes the proposition more attractive, but one or the small side might make it a hopelessly unpayable one. On the financial side it will be assumed for the purposes of this memorandum that by a "workable mining proposition" is meant a mine returning annually over a period of twenty years, after paying its share of profits to the Government, a dividend of at least 15 per cent. on the capital sunk, and also a further sum which invested at 3 per cent. C.I. will at the expiry of this period amount to the capital invested. The capital so invested, referred to subsequently as "accrued capital," is the amount spent on shaft sinking, equipment and advance development, plus interest at the rate of 6 per cent. up to the date of commencement of production. These assumptions necessitate a dividend of approximately 18½ per cent. on the accrued capital when the life is 20 years. This may seem high, but, considering the risks run, such an expectation is by no means an unreasonable demand. On the technical side the determining factors are the number and depths of the shafts, which will vary with the area of the property, the size of equipment, the recovery, the costs and the quantity of payable ore per claim.

Quantity of Ore per Claim.—Of the areas available for leasing, the most attractive and suitable are those lying alongside proved payable mines such as the Brakpan Mines, Geduld Proprietary, and Springs Mines (*vide* accompanying Map No. 2). The following may be assumed to be the average reef conditions in these areas:—Proportion non-productive, 60 per cent.; dip, 7 degrees; stoping width, 4½ feet; sorting, 20 per cent.; tonnage per claim, 8,170 tons from stopes, and say 830 tons from other sources, or a total of 9,000 tons per claim; the depth of reef will be from 3,000 to 5,000 feet.

* * * *

Government's Share of Profits.—In paragraphs 29 and 30, reference was made to the share of profits to which the Government is entitled in the existing lease with the Government Gold Mining Areas (Modderfontein) Consolidated, Ltd., and to the modified scale adopted in the last advertisement calling for applications for the lease of Brakpan-Schapenrust. The two scales referred to in the paragraphs mentioned are combined in the following diagram to enable a comparison to be made between them. Although it is now recommended that the law be so amended as to make it unnecessary for the Government to indicate beforehand what share of the profit it is prepared to accept, it is perhaps as well to point out that there are certain methods of participation in profits which are objectionable from the Government's point of view.

Preferable Basis of Profit Sharing.—One of the main principles to be adhered to is that any special supervision of the operations of the lessee should be unnecessary for the purpose of assessing the Government's share of profits. For this reason any assessment which has to take account of any unit, such as the ton, which is not accurately and automatically determined, is not acceptable. The procedure adopted in assessing profits tax is preferable to any other method. This takes into account only the profits, and cannot be falsified except by devices which would also be detrimental to the interests of the shareholders. The profits should therefore form the basis of any assessment of the Government's royalty as part owner, and the Government's share of such profits can most advantageously be expressed in the form of a percentage of such profits.

Sliding Scale Advisable.—Since it cannot be foreseen whether any particular area is going to be a highly profitable, or only a moderately profitable, or even an unpayable one, it is advisable to express the Government's percentage of profit in the form of a sliding scale, such that the Government's share increases with the profits. In devising such a sliding scale, the same considerations as have been mentioned in the preceding paragraph preclude the adoption of

certain bases, such as that of the ton. It would, for example, give rise to constant trouble if the lessee were to have to pay the Government a percentage of profits rising with the profit per ton. A safe basis is the ratio between profits and recovery for the accounting year. If the ratio be calculated as a percentage, the sliding scale can be expressed in terms of this ratio, as has been done in the scales already used by the Government in calling for applications for leases.

Form of Sliding Scale.—As regards the form of the sliding scale, it should be so devised that, while the Government gets an increased share of profits when these increase owing to a higher grade, they should not rise unduly when profits are increased by a reduction of costs. Otherwise efficiency would be penalised.

* * * *

Suggested Amendments of Law.—The objection to laying down minimum areas for owners' rights is that sub-division of farms might otherwise take place to such an extent that on proclamation the whole area would fall to the owner. On this account it is necessary to retain the principle that the area allotted to owners should bear some proportion to the area proclaimed. An adequate area could be assured the owner by a provision in the Law allowing him, when selecting his minepacht, and before the ground is proclaimed, to apply for a lease of adjoining ground under Section 46 of the Act, amended as suggested in Chapter V., which might be granted by the Government if satisfied that owing to the natural features of the reef, the grant is necessary for the purpose of constituting it, in conjunction with the minepacht and discovery rights, a mining proposition, and that such grant is in the public interest. Alternatively, the principle of rewarding work done, which is already recognised by the granting of discoverers' claims dependent upon the amount of boring, might be extended to the case of shaft sinking operations by a further reward of ground sufficient to make the total falling to the owner a workable proposition. The determination of the area adequate for owner's rights, depending upon many factors and varying with different individuals and with the same individual as the information at his disposal increases, is not a matter that lends itself to definition in a law. It is rather the function of some such body as a Mining Leases Board, which might report to the Minister of Mines as to whether in any particular case the provisions of the law as it exists are adequate or not, and in the latter case recommend the grant of such additional area as to render the total area allotted to an owner a workable proposition.

CONCLUSION.

Urgency.—It is a matter of urgency to the Union that the Far East Rand should be rapidly opened up. A statement was presented to the Dominions Royal Commission in April, 1914, showing that, of the fifty-eight companies then producing on the Witwatersrand, by the end of 1924 only 33 would be still working, by the end of 1934 only 20 would be still working, by the end of 1944 only 11 would be still working, by the end of 1949 only 8 would be still working. Since that date, two new producers have entered the list, but at present there is only one developing mine (Springs Mines), so that for many years to come there will only be this one addition to the list.

Delay Owing to Depth.—A further point is that practically all the more promising ground available for new mines contains the reef at great depths. This delays arrival at the producing stage, and with reef at a depth of 3,000 to 4,000 feet, five or six years must elapse before that stage is reached, even when the circumstances are favourable and nothing untoward happens. If there is a delay of several years before any new lease is arranged, this period must be added to that already mentioned, thereby still further increasing the time that must elapse before any new producer can come into the field to assist in counterbalancing the decline due to the exhaustion of the present producing mines.

Estimate of Future Yield.—Consideration of these circumstances points to the urgency of amending the law so as to facilitate the opening up of this new area. Its great importance to the Union will be appreciated from the data given above and from the further calculation that, if only one-half of the 73,988 claims in this area, not held by producing companies, and containing reef at a depth of less than 5,000 feet prove remunerative, after a deduction of 60 per cent. for non-productive zones and on the other assumptions given in Sections 25, 26 and 27, it will yield gold to the value of approximately £450,000,000.

POSITION AND PROSPECTS OF GOERZ & CO., LTD.

Far East Rand Interests—Modder Deep and Geduld Forging Ahead—Points from the Directors' and Consulting Engineer's Reports.

"The past year has been distinguished by a plentiful supply of native labour, which has considerably improved Rand mining conditions, although the high prices of stores owing to the war, the greater cost of realising gold, the payments to dependents of men on war service, and various other items have tended to increase working costs," says the directors' report of the Goerz and Co., Ltd. In the case of our own group, the year has been characterised by a marked improvement in the gold output, which totalled £1,600,773 as compared with £816,646 in 1914. Nothing has been more remarkable than the contribution to the Rand's output and dividends made during the last few years—and in 1915 especially—by that group of Eastern Rand properties which consists of the New Modderfontein, Geduld Proprietary, Brakpan Mines, Modderfontein B, Van Ryn Deep, Government Gold Mining Areas, and Modderfontein Deep Levels. These seven companies commenced crushing respectively in 1899, February, 1910, June, 1911, September, 1911, July, 1913, October, 1914, and December, 1914, and their aggregate record for the past five years, with their growing importance as compared with the whole of the Rand, has been as follows:—

	Tons milled.	Value of Output. per cent.	Working Proportion of Rand. per cent.	Profits. Total. £	Dividends. Proportion of Rand. per cent.
1911	1,032,624	4.6	5.0	332,500	4.3
1912	1,743,453	8.3	11.2	825,000	10.4
1913	1,901,479	9.1	11.6	1,068,516	13.0
1914	2,467,898	11.9	16.2	1,375,349	17.0
1915	3,631,218	16.5	24.2	1,888,498	24.8

It will be noticed that the proportion of the Rand's dividends contributed by these companies, nearly all of which have entered the producing stage during the last few years, forms a much larger percentage than the proportion of the output, and this is due to the fact that the average working profit of this group of mines is some 10 per cent. higher than that of the Rand as a whole.

MODDER DEEP.

The Modderfontein Deep Levels Company shows excellent results. It will be remembered that crushing was started in the last days of December, 1914. Working costs, which amounted to 20s. 6d. in January, 1915, were quickly brought down to 16s. 10d. in March, and they have since remained at about this level, notwithstanding the increased costs due to the war. The plant was designed to treat 30,000 tons monthly, but has actually treated an average of 34,500 tons since May last. The yield for the first half of 1915 averaged 32s. per ton, and for the second half 36s. 8d. Since June, when the mine got into its stride, the working profit has averaged just over £1 per ton. The developed ore reserves, calculated over a stopping width, at the end of each of the last three years have been as follows:—

Tons.	
982,000	assaying 7.0 dwt. (29/9) over 75ins. = 525 dwt.-inches.
2,450,000	assaying 8.0 dwt. (31/0) over 69ins. = 552 dwt.-inches.
2,670,000	assaying 8.3 dwt. (35/3) over 73ins. = 686 dwt.-inches.

In consequence of the excellent position of the mine as regards its developed ore reserves and the favourable working conditions underground, the Consulting Engineer in July recommended an increase of the reduction plant to a monthly capacity of 40,000 tons, at an estimated cost of £23,000. The increased plant is expected to be in operation in about three months. As stated in the last annual report, the option over 45,000 shares at 35s. per share held by us and our friends was duly exercised on March 31st, 1915. The Company is in a good financial position. A portion of the profits of the year were required to cover the debt so far as it was not liquidated out of the exercising of the option mentioned, but the Company was able to declare its first dividend of 10 per cent. in June last, six months after commencement of production. An additional 25 per cent. was declared in December, making 35 per cent. for the first year of the com-

pany's operations. A very substantial improvement on this result is expected for the present and succeeding years.

GEDULD.

In the case of Geduld Proprietary Mines, last year showed an increase of 24 per cent. in the tonnage crushed, and an increase of 44 per cent. in the working profit. The ore milled amounted to 25,300 tons per month, or 5 per cent. above the calculated capacity of about 24,000 tons. The Consulting Engineer in September last recommended an increase in the reduction plant to a capacity of 40,000 tons per month, and this increase is expected to become effective about September to December next. The developed ore reserves, which are reckoned upon a stopping basis, continue to show a noticeable improvement, and at the end of each of the last five years have shown the following figures:—

Tons.	
736,000	assaying 6.74 dwt. (28/7) over 53.5ins. = 361 dwt.-inches.
1,475,000	" 6.98 " (29/8) " 52.8ins. = 368 "
1,757,000	" 6.9 " (29/3) " 58.0ins. = 400 "
1,900,000	" 7.1 " (30/2) " 59.5ins. = 422 "
2,410,000	" 7.7 " (32/9) " 59.5ins. = 458 "

Attention is called to the last paragraph of that portion of the consulting engineer's report which deals with this property. The option held by us and our friends to subscribe 47,500 shares at 25s. per share was duly exercised on June 8th. The accumulated funds, the proceeds of these new shares, and some assistance from current profits enable the increase of plant to be made without interfering with the payment of dividends. The Company paid two dividends totalling 10 per cent. for the past year, and could easily have paid more but for the capital expenditure mentioned.

The Princess Estate is working on a very narrow margin of profit, and the position is accentuated by increased costs, mainly due to the war. The ore in the outcrop sections of the property is coming to an end, and, though the consequent later shortfall in tonnage for the mill could probably be made up by vigorous opening up and development of the deep level areas, any extensive programme of this kind would involve an amount of capital expenditure which, under present conditions, it would be difficult for the Princess Company to finance.

The small profit of the May Consolidated in 1914 was doubled in 1915, and the mine's life, which has already much exceeded expectations, is not yet at an end, though it can only be brief. The company paid a dividend of 5 per cent. at the end of last year, and it continues to hold 28,875 Modderfontein Deep Level shares, being in the proportion of one for every ten May Consolidated shares.

CONSULTING ENGINEER'S REPORT.

Mr. W. McC. Cameron writes, *inter alia*:—I beg to submit herewith my annual report on the operations of the companies in which you are principally interested, together with a few remarks on the mining industry of the Witwatersrand as a whole. The tabulated statement below shows the results obtained from the mines of these fields in 1915, as compared with the previous year:—

	1914.	1915.	
Natives employed, December	166,233	211,096	Increases 14,863
Whites employed, December	20,986	22,017	" 1,031
Stamps crushing, December	9,291	9,495	" 204
Tube mills grinding, Dec.	294	314	" 20
Tons crushed for the year	25,701,954	28,314,539	2,612,585
Ounces fine gold recovered for the year	8,033,570	8,772,919	739,349
Total value for the year	£34,124,434	£37,264,992	£3,140,558
Yield per ton	26/6	26/3	Decrease 3d.
Working costs per ton	17/1	17/5	Increase 4d.
Dividends declared	£8,073,436	£7,519,416	Decrease £554,020

The whole period was governed by war conditions which have raised the price of stores, increased the difficulties in securing supplies, machinery and spare parts, and taken a number of our men away on war service. The effect of the enhanced price of stores may be taken at about 7d. per ton milled for the year, as compared with prices immediately preceding the war, or a total of £826,000, and under the circumstances

the average working cost of 17s. 5d. per ton must be considered satisfactory. Working costs on these fields do not of course reflect total expenditure, and are not always comparable between group and group. Most of the mines of the Rand segregate expenditure on real capital account and Government taxes from working costs, but many exclude items such as gold realisation charges, payment to phthisis funds, renewals and replacements, in which are often included actual maintenance items, and in some cases working costs receive credit for sundry revenue, such as water sold, etc. There is again a wide variation between mine and mine, due to the tonnage capacity of the mine and its roof conditions. On the mines of your group, all expenditure, except that on capital account and for Government taxes, is charged to working costs and included in the 19s. 8d. per ton average of the group for the year, which is very good, all things taken into consideration. The mines of your group cover a wide variation of working conditions, from the Far East Rand to Roodepoort—from large to very small ore bodies, from flat to steep reefs, and from mines with no water to one pumping three million gallons per day from its underground workings. During 1916 the difficulties to be met in keeping the mines running will probably increase, still higher prices for stores will prevail, and costs of production will again rise considerably. The mines, however, will no doubt be kept in operation and the tonnage and gold output maintained. As pointed out in my annual reports for several years past, a decrease in the value of the output per ton from year to year must be looked for, and the decrease of 3d. this year is somewhat less than the average reduction of the last six years. On the other hand, the largely increased tonnage treated and ounces of gold produced, due to the ample supply of native labour available throughout the year, the entrance of two new gold producers, the Government Gold Mining Areas, Ltd., and the Modderfontein Deep Levels, Ltd. (which company belongs to your group), and the fact that there were no white labour troubles to interfere with work, largely compensate for the unfavourable factors brought in by the war. Although the working profit is considerably higher, the dividends declared are down by over £500,000, which is accounted for by the increase in the Government Tax levy, a husbanding of resources on the part of the industry, the heavier outlay on capital expenditure out of profits, and the largely increased stock of stores carried on the mines as a measure of safety against manufacturing and transport difficulties.

NATIVE LABOUR.

The supply of native labour, which is usually short of the requirements, thus causing ordinarily one of the greatest difficulties the mines have to contend with, has, since the war, been very good, due principally to the closing down of the diamond mines. There is, however, a noticeable tendency for the Cape Colony native to come on his own initiative to seek work, while from the East Coast fully 80 per cent. of the natives sent forward are old mine boys. The short period of service of the native, the consequent constant changing of the personnel of the force, and the large number which it is necessary to obtain in one way or the other during the year to maintain the working force—about 160 per cent. of the number working—remains a serious handicap to efficient work. An alteration in the present unfair restrictions imposed by the Mining Regulations on the employment of competent native labour in the Transvaal Province in more responsible positions would at once remove many of the disabilities as regards labour under which the industry suffers. The Native Recruiting Corporation has continued to carry on its activities to the satisfaction of all the mines

connected with it. The establishment of this institution, which should not be allowed to lapse, was a great move forward in the regulation of native wages and recruiting costs, the more equal distribution of labour amongst its members, and through its influence in the physical care of the natives and administration of native matters at all mines. It is to be regretted that the various mining groups cannot see their way to co-operate more closely in other fields where interests are common and where equally good results may be obtained. The constant attention given to the feeding, housing and medical care of natives is again shown in the low death rate of 16'38 per 1,000 for the year, while the accident death rate was but 3'19 per 1,000. It might be pointed out here that the accident death rate on the mines which you control was but 1'6 per 1,000 employees. The "safety first" movement has received considerable impetus from the work of a Special Committee, under the aegis of the Rand Mutual Association, which is doing much good in advising the mines in connection with safety measures and in keeping the "safety first" slogan to the fore. Your Johannesburg manager has been Chairman of this Committee since its inception. The Chamber of Mines has appointed a permanent Committee of Mine Medical Officers to advise in connection with matters affecting the health of natives, which is of great assistance. The relations between employers and their white workmen remain good. Points of difference arising during the year have been met by conferences. A special increase of wages to the lower paid white married men has been granted for the war period, to meet the increased cost of living. Facilities have been given to all employees who can possibly be spared to volunteer for war service. About 3,000 men from the mines have now enlisted, and some 200 high-class workmen were sent to England as munition workers. The positions of such men are being kept open for them, and in the case of enlisted men their dependents are receiving monthly allowances from the mines. To do this the industry has been obliged to work short-handed at most points, and employ a large number of new and inefficient men. Continued experimental and research work on the part of the Phthisis Prevention Committee has added much to our knowledge of the disease and means of prevention. That Committee, which is appointed by the Government, has been ably assisted in its work by the Chamber of Mines with its dust sampling staff, who are now training men so that each mine may have its own dust sampler and prevention official. A careful analysis of the returns of the Phthisis Compensation Board, all possible sources of error being duly considered, show conclusively to my mind that the improvement made in the mines, chiefly since 1912, has had a marked effect on the incidence of the disease. The number of applicants to the Board is notably decreasing, both in the total and those actually compensated, and the period of work of those granted compensation is increasing. A very liberal holiday scheme, which will have a beneficial effect in connection with the disease, has been adopted for all the mine workmen, the more generous terms of from 12 to 24 days per annum on full pay being given to underground employees. While it will take some years yet to prove by statistics that the disease is no longer being produced on the Rand, those who have given much time to the study of this disease and its prevention are of the opinion that phthisis can only today be contracted in these mines through gross carelessness on the part of the employee himself. A special war tax of £500,000 was levied on the mines for the year, and it is probable that such taxation will be continued during the war. Much attention has been devoted throughout the year to the Far East Rand area, in which you are principally interested to-day, and in which direction lies the main opportunity for the extension of the industry. There has been no new mining activity of importance in districts outside the Witwatersrand, and prospecting work in other parts of the Union is at a low ebb. The following statement shows the production for the year of the milling mines of your group:—

	Gold produced.		Value.	
	Tons milled.	Fine oz.	£	s. d.
Geduld Proprietary Mines	303,440	110,790,630	468,075	7 7
May Consolidated	168,120	30,244,815	127,987	15 5
Princess Estate	268,500	80,340,431	339,777	17 7
Modderfontein Deep Levels	390,000	158,728,224	671,931	16 9
Totals	1,130,060	380,104,103	£1,607,772	15 4

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THE YEAR WITH THE NEW KLEINFONTEIN.

Points from Consulting Engineer's and Manager's Reports—Development Results and Policy—Progress of New Plant.

The working profit earned by the New Kleinfontein in 1915 amounted to £267,103; the balance carried forward from the previous year was £20,163, giving a total of £287,566, which has been dealt with as follows:—Dividends Nos. 21 and 22 of 5 per cent. each, £115,154; Government Taxes—Profits Tax, £21,600; Special War Levy, £7,200; Income Tax, £11; total, £28,811; interest, £9,566; shaft sinking, £12,318; advance development of Apex section, £13,073; machinery, plant, etc., £18,777; pumping and caretaking—Apex, £13,138; directors' special remuneration, £2,000; balance unappropriated, £14,699; total, £287,566. The abnormal conditions imposed on the gold mining industry by the war have resulted *inter alia* in a considerable increase in the cost of shipment and realisation of gold, which at present is estimated at ls. 7-9-9d. per fine ounce, as compared with 10-8-2-9d. under pre-war conditions. Included in the working costs for the year are payments to the Union Government on account of Miners' Phthisis Compensation and Insurance Funds amounting to £10,143. General.—The construction of the new reduction equipment on the Apex-Benoni section has progressed steadily, and as rapidly as could have been expected in the abnormal times through which we are passing. As was anticipated, delays have been experienced in obtaining the necessary machinery from the manufacturers, but it is hoped that the plant will commence operations in July next. An extensive development programme has been inaugurated in the Apex section of the mine, in order to prove a larger area of that section as soon as possible, and prepare it both to meet the requirements of the new reduction works and, as necessary, to supplement the ore from the Kleinfontein section to the old reduction works as this section of the mine becomes worked out.

Mr. E. J. Way, the consulting engineer, in his annual report for the year 1915, writes:—The principal features with which I propose to deal are: (1) Results of development; (2) future mining policy; (3) results from reduction works; (4) new plant. (1) Results of Development.—The annual re-valuation of the ore reserves shows there were standing developed 2,866,941 tons, having a value of 5-5-4 dwts. on a mining basis. As compared with the total ore reserves at the end of the preceding year, there is a drop in the tonnage of 23,790 tons and in the value of '07 dwt. The manager has very carefully given details in his report, showing how this quantity and the assessment of values have been arrived at. I said last year that it might be necessary to reconsider the values given to Benoni and Apex ore, when actual stoping operations commenced. This remark still particularly refers to Apex reserves, the assessment of which cannot be accurately made until actual stoping operations have started. The reserves as they stand, allowing for average sorting (17 per cent.), and an extraction in the reduction works of 96 per cent., should yield approximately 26s. 2d. per ton. The yield from ore milled last year, without allowing for realisation charges, was £1 6s. 1-8-9d., which, when allowance is made for the ore taken from reclamation work—which is not included in the reserves—compares very favourably with the estimate which I gave last year of the value of the ore reserves at 26s. 7d. Attention should, I think, be drawn to the very large development footage accomplished during the year. The total for drives on reef, crosscuts, winzes, rises, boxholes, stations and shaft-sinking, including the connecting rise between Apex and Benoni, amounted to 25,701-5 feet. In addition to this there were excavations for sumps and other work equal to 60,811 cubic feet. This footage, taken in consideration with the tonnage handled in the reductions works, is probably a record for any one year's work on any mine on these fields, as it, of course, includes all extra work done (10,416ft.) on account of development in the newly-acquired sections, which during the year under review yielded very little ore for milling purposes. (2) Future Mining Policy.—I have nothing to add to the remarks which I made last year, except to state that the principles laid down then have been carefully carried out, and no modifica-

tion of importance has become necessary, and it would appear that the policy then agreed upon will be most satisfactory. (3) Results from the Reduction Works.—In 1914 Brown tanks were introduced at the slimes works with the object of slightly increasing the capacity of the slime plant, and also improving, if possible, the extraction results. The increase during the four full months of 1914, during which these tanks ran, of 10 per cent. on the previous capacity has been maintained. With regard to the extraction results, following up the table given in my last year's report, the figures hereunder may be of interest:—1915: January to December: Sand, 369,021 tons; assay charges, 2-6-27 dwts.; value residues, 0-301 dwts.; slime, 267,129 tons; assay charges, 1-8-15 dwts.; value residues, 0-173 dwts.; sand and slime, 636,150 tons; assay charges, 2-2-28 dwts.; value residues, 0-247 dwts. It will be observed in comparing these results with the results from September-December, 1914, that a slight improvement has been made in the final residue. In the four months above referred to, the final residue was '25 dwt., as compared with '30 dwt. before the introduction of the Brown tanks. The final residue for the year under review is '247 dwt. The slime residue for the whole year is a little higher than that for the last four months of 1914, owing to two bad months during the year under review, and is '173 dwt. for the year as compared with '25 dwt. before the introduction of the Brown tanks. This may be considered satisfactory, and leaves little margin for improvement. (4) New Plant—Apex Section.—Progress with the alterations and additions to this plant has been very satisfactory. Provided that all details of machinery not delivered at date arrive within reasonable time, this additional 25,000-ton reduction unit should commence operations not later than July, 1916. General Conclusion.—In my last year's annual report I anticipated that there would be an improvement in the general working results. This improvement has been realised. The working profit made during the year under review amounts to £267,103 2s. 1d., as compared with £262,874 14s. 5d. for the previous year. The working profit per ton for the year under review was 8s. 4-6-6d., as compared with 8s. 8-9-7d. for 1914, but the difference in the total position has been made up by the increased tonnage milled, amounting to 35,150 tons. The general position of your venture is very satisfactory.

Mr. E. H. Bulman, the manager, writes, *inter alia*:—The total revenue and working costs for the 12 months ended 31st December, 1915 (636,150 tons milled), was as follows: Revenue per ton from all sources, £1 6s. 1-8-11d.; cost per ton of realisation charges on gold, 6-2-11d.; £1 5s. 7-6-70d. Working Costs.—Mining and hauling, £316,470 15s. 6d., or 9s. 11-3-95d. per ton; development to working costs, £45,692 3s. 3d., or 1s. 5-2-38d.; crushing, sorting and tramming, £25,539 0s. 9d., or 9-6-35d. per ton; stamp and tube milling, £52,143 5s. 9d., or 1s. 7-6-72d.; sands and slimes treatment, £50,716 11s. 11d., or 1s. 7-13-4d. per ton; general charges, £57,854 16s. 3d., or 1s. 9-8-72d. per ton; total working costs, £548,416 16s. 5d., or 17s. 2-9-01d. per ton; profit per ton, 8s. 4-7-69d. The average working costs, as shown above, are lower than the previous year by 4-2-86d. per ton milled, which, in view of the increased cost of stores and materials due to the war, should be considered satisfactory. The extraordinary work which has been done during the year out of working expenditure consists of the following:—Mill Renovation.—This work has made slower progress during the year owing to the difficulty in obtaining the necessary material. Twenty stamps were completed and 90 stamps still remain to be done; of these, however, only 40 stamps are in urgent need of repair, and the remaining 50 stamps will be renovated as they require it. New Slimes Dams.—Owing to the old slimes depositing area becoming filled it became necessary to arrange for a new site, and surface rights for this purpose have been obtained over a large area calculated to accommodate the slime deposits for the rest of the life of the mine. This new slimes

dam is some 2,500 feet distant from the slimes plant, and the necessary piping and fencing and pumping alterations have been completed, and everything is working satisfactorily. 20th Level Haulage.—This is a scheme which is being carried out so as to distribute the ore in the different sections of the mine more equally between the present main hauling shafts, and it consists of a main electric haulage from the No. 1 subsidiary shaft on the 20th level to No. 2 shaft, and from there west along the boundary of the property to tap the whole of the ore in this region of the Kleinfontein section. Sands Filling.—This important work has made steady progress, and some considerable areas of dangerous worked-out ground adjacent to the Main No. 2 shaft have been filled, securing the shaft against damage from heavy caving. The work should make rapid progress from now on, and will not only make the mine safe, but it will also enable a considerable amount of ore to be reclaimed from pillars, etc., from the worked-out areas. Miners' Phtthisis Compensation Fund.—The company's assessed contribution to this fund has again been included in working costs, and amounted to £5,424 2s. 10d. This is exclusive of the company's contribution to the insurance fund, which amounted to £4,719 5s. 4d. Payments to Dependents of Employees on Active Service.—A considerable number of employees have again gone on active service, and allowances to their dependants for the year amounted to £2,24 18s. 11d.

General Mining and Finance.

QUARTERLY REPORTS.

The reports of the General Mining Group for the quarter ended March 31 gives the following particulars:—

Meyer and Charlton.—Number of feet driven, sunk and risen, 1,085 feet; footage sampled on reef, 993 feet; average stoping width, 49·38 in.; average assay value over stoping width, payable (833 feet sampled) 23·87 dwts., low grade (160 feet sampled) 2·11 dwts. The working profit for the quarter is £899 less than for the preceding quarter.

Aurora West.—Number of feet driven, sunk and risen, 1,401½ feet; footage sampled on reef, 1,115 feet; average stoping width, 42 in.; average assay value over stoping width, payable (610 feet sampled) 7·6 dwts., low grade (505 feet sampled) 3·3 dwts.

Van Ryn G.M. Estate.—Number of feet driven, sunk and risen, 2,474 feet; footage sampled on reef, 905 feet; average stoping width, 42·8 in.; average assay value over stoping width, payable (570 feet sampled) 10·32 dwts., low grade (335 feet sampled) 2·42 dwts. The working profit shows a decrease of £2,187 11s. 7d. as compared with the previous quarter, due to higher working costs, which include expenditure on account of dust allaying (underground) and the extra cost of stores which are continually increasing in price as a result of the war. Sinking operations in No. 2 shaft have been completed, and the work of timbering and cutting ore bin stations is being proceeded with.

Roadpoort United Main Reef.—Number of feet driven, sunk and risen, 4,433 feet; footage sampled on reef, 2,410 feet; average stoping width, 47·35 in.; average assay value over stoping width, payable (1,575 feet sampled) 7·90 dwts., low grade (835 feet sampled) 2·62 dwts. The working profit shows an increase of £5,106 13s. 5d. over that for the preceding quarter. Development in the lower levels of the Kimberley main section continues to expose ore of improving value, a noteworthy feature being the improved value of the Main Reef. Details of the more recent development work in this section are as follows:—Main Reef: 16th level, 445 feet driven, giving an average value of 6·1 dwts. over 57 inches; 17th level, 55 feet driven, giving an average value of 6·3 dwts. over 48 inches; 18th level, Main Reef, intersected by boring, assays 8·8 dwts. over 48 inches. South Reef: 18th level, 705 feet driven, risen and sunk, giving an average value of 10·1 dwts. over 42 inches; 19th level, 335 feet driven, risen and sunk, giving an average value of 7·9

New Plant for Apex Section.—The work in connection with the alterations and additions to the Apex plant, to treat 25,000 tons per month, has made good progress, and, considering the difficulties and uncertainties of deliveries, it is satisfactory to note that the completion of the work will not be much delayed beyond the estimated time. The re-equipment of the Apex (No. 7) shaft with the steel headgear, winding engines, compressor and boilers from the South Shaft has been completed, and the whole is working well, and will be adequate for the immediate future operations of this section of the mine. General.—The energetic measures which have been taken for the past years to improve the health conditions of mining, by allaying injurious dust and by improving ventilation, and general sanitary conditions, have been continued vigorously during the year, and no expense has been spared in trying to bring these conditions as near perfection as possible, and in this connection it has been decided to instal two ventilating fans of ample capacity—one to substitute the small temporary fan at present operating in the Kleinfontein Section of the mine, and one to ventilate the Apex section through No. 6 shaft. When these fans are working, it is considered that the health conditions will be more easily and positively controlled than is possible under present conditions. A more liberal scheme of holiday leave has been agreed upon for workers on the mine, and this should have the effect of making underground men more able to resist the injurious influences of underground work.

dwts. over 42 inches. The whole of the footage driven, risen and sunk on reef in the 16th, 17th, 18th and 19th levels is payable, no unpayable ground having been met with. Of the total development footage in all sections of the mine, for the quarter under review, 65 per cent. has shown payable values averaging 7·9 dwts. over 47 inches.

New Goch.—Number of feet driven, sunk and risen, 919 feet; footage sampled on reef, 659 feet; average stoping width, 66 in.; average assay value over stoping width, payable (325 feet sampled) 11·45 dwts., low grade (334 feet sampled) 2·26 dwts. The working profit shows an increase of £3,509 5s. 1d. over that for the preceding quarter, consequent on an improvement of approximately 1s. 2d. per ton in the grade of ore milled.

West Rand Consolidated.—Number of feet driven, sunk and risen, 4,296½ feet; footage sampled on reef, 2,651 feet; average stoping width, 52 in.; average assay value over stoping width, payable (1,541 feet sampled) 7·8 dwts., low grade (1,110 feet sampled) 2·2 dwts. The working profit reflects a decrease of £11,143 13s. 9d. as compared with that for the previous quarter. This diminution is accounted for partly by increased working costs (due chiefly to the accession to the native labour force of a considerable number of new boys in preparation for the increase of tonnage anticipated from the two additional tube mills now being installed), and also by a drop in the grade of the ore milled—which was abnormally high for the previous period.

S. A. MINING YEAR BOOK.--1915

By S. R. POTTER.

(Editor, "S.A. Mining Journal.")

Vol. I.

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IMPORTANT LEGAL DECISION AFFECTING MINING COMPANIES.

Detailed Judgment in Barberton "Cause Celebre," Moodies vs. Blackmore—Appeal Lodged.

The following is the judgment in full of the Resident Magistrate (Mr. A. G. E. Pienaar), in *re* the Moodies Gold Mining and Exploration Co., Ltd., *versus* Sidney Pratt Blackmore:

In this action the plaintiff company claim from the defendant the sum of £57 10s., being in respect of rent due from the 14th of July, 1909, to the 13th April, 1915. The claim is based upon a deed of lease dated the 14th July, 1905, and entered into between the plaintiff company and one H. S. Turton, whereby a certain piece of land situate on the farm Oorschot in this district was let to the said Turton for a period of 9½ years. Turton immediately, with the knowledge and consent of the plaintiff company ceded all his rights, title and interest in the said lease to defendant and the action now brought by the company is based on this cession. The object of the contract is set out in paragraph 4 of the lease and is described as "for the purpose of markets gardening, agriculture or tree planting and as a residence for the lessee." The main facts in the case are not disputed, namely, the lease, the concession and conditions therein. It is also admitted by plaintiff company that the farm Oorschot in question is a concession farm, which defendant in his plea calls a "mining concession" and it is further agreed that these concession farms are in law mining titles within the meaning of the Precious and Base Metals Act No. 35 of 1908, as defined by Section 3 S.S. (f). The defendant in his plea sets up three defences of which the last is withdrawn and the plaintiff company in reply raise a number of issues by way of exceptions. The arguments advanced by both counsel on these exceptions were also relied upon and requested to stand as arguments on the merits in the case. No witnesses were called. The first exception raised was that the defendant as lessee cannot in law dispute the title of the plaintiff company as lessors. In support thereof a number of authorities were quoted, notably that of *Clark vs. Nourse Mines, Ltd.* (S.C. 1910). In this case it was decided that the English doctrine of Estoppel is in accordance with the principles of our law when the enjoyment of the premises under lease had not been disturbed. The defendant does not allege interference and it must be assumed that he had had full and beneficial occupation. If this exception is well founded then the case presents no further difficulties but the defendant denies this construction of his plea and contends that it strikes very much deeper and relies on Clause 67 of the Gold Act of 1908. He pleads that the lease was *ipso facto* cancelled under and by virtue of the provisions of the said clause. The plea contains a number of clauses which have no direct bearing on the case but in effect the defence is as follows—that although the lease is a perfectly valid one the object for which it was created could not be carried out after Law 35 of 1908 came into force because under the provisions of Clause 67 agricultural farming on a concession farm which is a "mining title" within the meaning of the Law, was made a wrongful act and prohibited, and that the lease must therefore be regarded as determined as from that date. The clause in question enacts that "the rights conferred by a mining title, whether the same has been acquired under this act or a prior law, shall not include the right of disposal over the surface of the ground held under such title, which right of disposal is reserved to the Crown for the purposes of this Act or any other law." The wording of this section leaves no doubt in my mind that the control of surface rights held under a mining title is reserved to the Crown. It is common cause that the farm Oorschot is a concession farm and a mining title within the meaning of this Act, and it is agreed that it is unproclaimed land. All rights over the surface of this ground are therefore, in my opinion, vested in the Crown. The clauses in this Chapter 9 which apply to concession farms are from 67 to 70 and all the others refer to

open proclaimed land. The first paragraph of Sub-Section 1 of Clause 68 reads as follows:—"Save as is otherwise specially provided in the Act, the surface of ground held under mining title shall not, without the written permission of the Mining Commissioner, be used otherwise than for mining." The clause then proceeds to explain what permission may be granted and the procedure to be adopted in transmitting applications. It seems to be quite clear from this clause and remaining two clauses dealing with ground held under mining title, whereunder concession farms are included, that in no case whatever is the official concerned permitted to authorise the use of such surface rights for farming operations and in these circumstances the words *shall not*, in the second line of this clause constitute, in my opinion, a distinct and imperative prohibition. The question now to decide is whether a Statutory prohibition of an otherwise perfectly valid Act, that is, "the carrying on of farming operations under a lease on mining title ground," is a good defence to an action for rent due under the said lease. I think this question must be answered in the affirmative. Here we have an Act which I find is absolutely prohibited by Statute. It is immaterial whether the prohibition is a Statutory one or under common law. To farm on mining title ground would be a wrongful act as being contrary to a provision in the law. Whereby Statute and Act is actually prohibited then a contract contrary to the provisions of the Act is void (*Rex versus Masego T.P.D.* 1915). But plaintiff company claim in their exception to defendant's plea that Section 67 of the Act does not have the effect of interfering with their rights held in freehold—in other words, that concession farms are not included under the provision of this Section for the following reasons:—
1st.—That the farm Oorschot is held by plaintiff company under dual title, namely, a freehold title over which a mining title had been imposed. 2nd.—That in such a case it could never have been the intention of the Government to acquire any rights over *freehold* ground which has not been proclaimed a public digging in the ordinary way. In support thereof it is pointed out that the heading of Chapter IX. is inconsistent and that the term "mining title" there must be construed so as to exclude concession farms which are unproclaimed land, in order to bear out the meaning of the remaining words "and use of *other* proclaimed land." Further that the words *held under* in Clause 67 should be read as *held by virtue*. It is then argued that there is an element of doubt as to what was really intended by the Legislature in which case the construction must be one which is opposed to confiscation of vested rights. This argument seems to be very sound providing there is an ambiguity present, but I do not think this Court is entitled to introduce strange words in a reading of a section in the Law or to go beyond the interpretation of a term given to it by the Legislature. I must give the words their true and ordinary meanings, and no matter what the consequences may be. The introductory notes to the chapter cannot, in my opinion, affect or divert the true meaning of the clauses. The term "mining title" in the interpretation of terms includes both proclaimed as well as unproclaimed land. The finding of the Court is as follows:—

1st.—That the farm Oorschot being a concession farm is a "mining title" within the meaning of the Act, and is not excluded from the general provisions of Section 67.

2nd.—That farming operations in terms of the lease is an act which is absolutely prohibited under the provisions of Section 68.

3rd.—That such a Statutory prohibition is a good defence in this action for rent, and that plaintiff company must therefore fail in their action.

Having arrived at this decision it will not be necessary to deal with the Plea in Bar. The case is dismissed with costs. An appeal has been lodged.

ECONOMIC GEOLOGY AND MINERAL INDUSTRY OF SOUTH-WEST AFRICA.—V.

By DR. P. A. WAGNER.

THE EXPLOITATION OF THE DEPOSITS.

Prospecting and Sampling.—The methods adopted for determining the payability or otherwise of a likely looking patch of "gravel" are very simple. In the first place, a number of natives, familiar with the appearance of rough diamonds, are set "picking," that is crawling on all fours over the deposit collecting, picking up such diamonds as they may happen to set eyes upon. The uppermost layer of gravel, as we have already pointed out, has invariably been enriched by natural concentration, and should the picking fail to yield fair numbers of diamonds, it may safely be concluded that the material is too poor to repay exploitation. In the case of very shallow deposits of "gravel" this is the only method of sampling resorted to. As a rule, however, the "picking," if results have been at all favourable, is supplemented by further testing. This either takes the form of digging trenches from one to two metres in width across the deposit in a direction normal to the prevalent trend of the diamond streaks, which is generally from north to south, or by putting down prospecting pits, two metres in diameter, at regular intervals, the material excavated being in either case carefully washed. Owing to the sporadic distribution of the diamonds through the "gravel," the result of such test washings, except where the trenches or prospecting pits are fairly closely spaced, are apt to be misleading, and estimates based on them have in many instances proved quite erroneous.

Mining and Dressing Operations.—The "gravel" is generally excavated by hand, using ordinary shovels, which, where the deposits are shallow and the rock surface on which they repose is uneven and hummocky, are supplemented by brooms with long hard bristles. Several of the larger companies have, however, installed mechanical excavators. In the case of the Koloniale Bergbau-Gesellschaft these take the form of electric shovels, with a shovel capacity of one cubic metre, while on the Colmanskop and Schmidtfeld claims large electrically operated, self-propelling sand dredges were in operation for about a year prior to the outbreak of the war. The dredge employed by the Colmanskop Company has a capacity of 500 cubic metres per ten-hour shift. These mechanical excavators are capable of dealing with some of the deposits of diamondiferous grit and cemented shingle. Much of this material, however, is so hard that it will require to be blasted with dynamite. The excavated "gravel" is usually dry-screened on the spot with a view to eliminating all particles under 1½ millimetres and over from 5 to 10 millimetres, according to the locality, and of obtaining a sized product for concentration. On some of the smaller claim-holdings the screened gravel is directly treated by hand-jogging in small circular sieves or in portable hand-operated movable-sieve jigs. As a rule, however, it is loaded into-tipping trucks, running on 20lb. rails, and conveyed to small dressing plants, equipped with mechanically operated jigs, for further treatment. Various types of jigs are employed, the most popular being the so-called Schiechel separator, a circular air-plunger jig, of which a detailed description has been given by the writer in a previous publication. The recovery made by the Schiechel separators is anything from 90 to 95 per cent., and where, as on the claims of the Colmanskop Diamond Mines, Ltd., two rows of the jigs are arranged in series, it has been proved by tests that practically no diamonds are lost. The jigs have a capacity of about 4½ cubic metres of screened gravel per diem. A number of the plants scattered over the fields are equipped with twelve jigs, and are thus capable of treating about 50 cubic metres of "gravel" a day. Another concentrating appliances which finds favour is a fixed-sieve piston-jig, manufactured by the Humboldt Company. The concentrate from the jigs is invariably subjected to a further concentration by hand-jogging in circular sieves, and from the concentrate thus obtained the diamonds are picked out by hand. Two huge central treatment plants, erected on the North Block of the Koloniale Bergbau-Gesellschaft and on the Government Block respectively, were nearing completion when the war broke out. The plants have been designed to treat on a large scale the diamondiferous grits, sandstones, and cemented shingle, as well as the ordinary "gravel." The plant of the Koloniale Bergbau-Gesellschaft consists of a screening and crushing section and a concentrating section which are separately housed. The former is equipped with shaking-screens, rock breakers, and crushing rolls. Wet screening will be adopted, the reason for this departure being that, in the past, dressing operations have on many occasions been seriously interfered with by heavy night dews and showers of rain, which cause the "gravel" to cake, when it cannot be satisfactorily dry-screened. In the concentrating plant a combination of Schiechel and Humboldt jigs is to be employed. The concentrate made by these will be passed over a powerful Ullrich wet magnetic separator, and the product thus obtained, after being dried, is to be passed in that condition over the same separator so as to get rid of any magnetic particles which may have remained entangled in the concentrate. From the final product the diamonds will be picked out by hand on a travelling rubber belt. The plant on the Government Block is similar, but has been equipped entirely with Humboldt jigs. It has a capacity of 750 cubic metres per diem. There is also a large modern treatment plant on the Schmidtfeld claims of the Vereinigte Diamantminen Aktien-Gesellschaft. In this plant the ground, excavated by means of a large dredge, is classified by screening into a — 5 mm. + 3 mm. product and a — 5 mm. + 1½ mm. product, everything above 5 mm. and below 1½ mm. being discarded.

The coarse and fine products are separately treated on Harz jigs, and the concentrate, after passing over a second row of jigs, is sorted by hand.

Water Supply.—One of the greatest problems by which the engineers on the diamond fields were originally faced was that of obtaining adequate supplies of water for treatment and drinking purposes. By putting down shallow wells in certain of the valleys and depressions moderate supplies of brackish water were obtained, but the supplies, in most instances, were quite inadequate. A bold lead was taken in this matter by the Koloniale Bergbau-Gesellschaft, which erected a large pumping station on the shores of Elisabeth Bay, from which sea-water is pumped to Kolmanskoppe through a pipe line eighteen miles in length. The Colmanskop Diamond Mines, Ltd., the Diamanten Pacht-Gesellschaft, and several of the smaller companies operating in this section of the fields also obtain their water from this pipe line. Pumping schemes of the same kind were subsequently inaugurated by the Pomona and Vereinigte Diamantminen Companies. At the Bogenfels and Granitberg plants of the Deutsche Diamanten-Gesellschaft all the water required is obtained from wells sunk in the vicinity of the plants. Water for drinking purposes is derived partly from condensers erected along the coast and partly from the wells at Garub, almost 100 kilometres inland, whence the water is sent by rail to Kolmanskoppe. Owing to the difficulty of obtaining fuel, the operating expense in connection with the condensers are very high. At the Bogenfels condensing plant the cost of the water actually works out at 72 marks per cubic metre, which is equivalent to about 4d. per gallon. The extreme southern section of the diamond-fields is supplied from the spring at Buntfeldschuh, to be presently referred to, which yields fair quantities of potable water.

Transport.—The question of transport, which at the outset also offered considerable difficulties, has been solved by the construction of light narrow-gauge (2 feet) railways. A main line, sixty-four miles in length, extends from Kolmanskoppe to Bogenfels. Tractive power on this line is supplied by benzol-electric locomotives of 75 horse-power. Numerous branch lines connect the outlying fields with the main line. The Colmanskop and Schmidtfeld claims are also served by lines of light railway.

(To be continued.)

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RAND EARTH TREMORS COMMITTEE'S REPORT.—IX.

Exhaustive Review of the Subject—Historical and Descriptive—Valuable Recommendations.

87. *Removal of all Pillars Impracticable.*—Some witnesses have suggested the entire removal of all pillars, and filling in the excavated areas as soon as possible with sand. This view appears to rest on a misapprehension of the existing conditions. The portions of the Central Witwatersrand which were so rich that practically all the reef could be mined, have been very largely exhausted. The cavities already exist, and, as has been pointed out, filling them in completely with sand would now neither stop the shocks, which are due to the bursting of the pillars left in, nor serve any other useful purpose commensurate with the expense. Sand-filling is undoubtedly of great use in limiting the movement of any ground otherwise inadequately supported, and it will probably be resorted to more and more in future for rendering mining under certain conditions both safe and possible, but it has not in the past stopped the shocks, and will not do so in the future. The only portions of the existing cavities which can be filled to advantage are those situated in areas where movement would have disadvantageous results, or where it is desired to remove pillars, either for the sake of the valuable ore they contain, or for obviating disastrous rockbursts.

88. *Economic Considerations.*—The removal of shaft pillars both for vertical and incline shafts before commencing stopping operations and substituting sand-filling for them, so as to remove the pressure from these important points once and for all, is also included in the suggestion referred to at the beginning of paragraph 87. Such a bold step is, however, one that most engineers with any regard for the financial interests involved would hesitate to endorse, and the more conservative methods previously indicated will probably be preferred.

89. *Objects of Mining.*—It must be remembered that mining operations are not carried out with a view to avoiding shocks in neighbouring towns or dwellings. Mining is concerned with the extraction of ore with the maximum amount of profit and the least risk of life and health, and, although shocks may be unpleasant and even give rise to a sense of alarm for the safety of life and property, the taking of steps to avoid them does not primarily constitute one of the objects of mining.

90. *Damage Caused by Shocks does not Warrant Drastic Changes.*—The underground effects of rockbursts are far more serious than those felt on the surface, and it is for this reason mainly that steps should be taken to prevent them. If the prevention of shocks in Johannesburg entailed the bringing into force of mining methods which would greatly increase the cost of mining, the small and problematical amount of damage done to buildings and the alarm felt by the inhabitants would be insufficient grounds on which to base the enforcement of such methods. When, however, as the Committee has shown, a modification of existing practice should result not only in greater safety and economy on the mines, but also diminishing the frequency and severity of shocks, it may reasonably be expected of the mines that such steps should be taken.

91. *Specially Constructed Buildings.*—In conclusion, your Committee desires to point out that while, as has been stated, no serious damage is anticipated to take place in buildings as the direct result of tremors, buildings may be expected to suffer from subsidences caused by mining excavations, unless specially constructed. In view of this, and also because some of the real earthquake shocks which have occurred in the Orange Free State have been known to damage buildings, although outside the terms of reference to your Committee, it may not be inopportune to direct the attention of architects and builders to the detailed report on building in earthquake districts which is printed in the Report of the British Association for the Advancement of Science for 1889, pages 303 to 314.

SUMMARY.

The main results of the Committee's investigations may be summarised as follows:—

1. The shocks felt in Johannesburg began to attract

general attention in 1907. Since that date they have increased in number and intensity.

2. The shocks consist practically of a single sharp vibration, and differ in this respect from earthquakes, which are made up of a train of earth waves, whose vibrations are generally slower and of greater amplitude than that of a shock.

3. The shocks have their origin in mining operations.

4. The removal of the reef or reefs over large areas throws the weight of the superincumbent mass on to the unexcavated portions or pillars, which, when the depth reaches 1,000 feet or over, are unable to bear the weight and are crushed.

5. When the crushing takes place suddenly, a rockburst occurs and causes a shock which is transmitted to the surface on both sides of the excavated area for a distance varying with the violence, and extending occasionally to as much as seven miles.

6. While rockbursts are the cause of the severest shocks yet felt and of almost all other shocks, there are some which are probably due to the fracture of the strata overlying the excavated areas or to the settling of these strata into and over the excavation.

7. The greater frequency and violence of shocks in Johannesburg, as compared to other parts of the Witwatersrand, are due to the fact that the reef on the Central Witwatersrand has been more extensively mined than anywhere else, owing to its more general payability.

8. The underground effects of rockbursts are sometimes very disastrous, causing great loss of life and severe damage to the mine. Persons are killed and injured by masses of rock falling upon them or by pieces projected from the face under pressure, and shafts and other openings are closed up or otherwise damaged by the crushing in of the adjacent strata.

9. The effect of the shocks on buildings is to accelerate the formation and growth of cracks. Cracks would also develop if there were no shocks, but a longer time would be requisite to affect the buildings to the same degree.

10. The other effects recorded, such as the rattling of crockery and the occasional fall of loose articles, are comparable to the effects of a heavy thunderclap or the shaking by a severe gust in a windstorm.

11. The prevention of the shocks is to be sought in the removal of existing pillars when they are insufficiently strong to withstand the pressure to which they are exposed, and in the substitution of sand-filling or other substantial form of packing.

12. The disastrous underground effects of the bursting of such pillars, in cases where they cannot be removed, may be diminished by sand-filling in the adjacent areas, but this will not generally relieve the pressure sufficiently to prevent the burst.

13. In the case of new shafts, the pillars should be made much larger than has been the usual practice, both for vertical and for incline shafts. Incline shafts should be placed in the footwall as far as possible, and this practice could in some instances also be applied to drives.

14. Drive pillars and slope pillars should be utilised as little as possible and their places taken by artificial support. Where they cannot be avoided they should be looked upon as temporary supports, and should be made large enough to withstand the pressure during the time they are required. They should be mined as soon as their useful purpose has been served, the surrounding hanging being supported on packs.

15. While it may be expected that severer shocks than any that have yet been felt will occur in Johannesburg, their violence will not be sufficiently great to justify the apprehension of any disastrous effects.—We have the honour to be, Sir, your obedient servants,

R. N. KOTZE (Chairman).
R. T. A. INNES.
D. WILKINSON.

Rhodesian Section.

RHODESIAN MINERAL OUTPUT.

Detailed Returns.

We have received for publication from the office of the Rhodesia Chamber of Mines (Incorporated) the following detailed statement of the mineral output for the month of March, with comparisons and values:—

MATABELELAND.

BULAWAYO DISTRICT—	No. of stamps.	Tons treated.	Yield. ozs.	Value £
Abercorn	5	63	80.36	333
Abercorn 4 (W. J. Lane)	(5)	189	31.71	131
Do. (sands)	—	108	10.94	45
Agincourt (Hogg & Co.)	5	30	22.89	95
Antelope G.M. (Rhod.), Ltd.	2B 8P 1T	3,519	702.13	2,911
Do. (slimes)	—	3,237	829.25	3,438
Ante Up (J. A. McMurray)	5	21	55.58	230
Baltimore (W. R. Hunt)	4	250	42.32	175
Baeh (Morrison & Granger)	5	350	46.81	194
Do. (sands)	—	450	45.66	189
Bassick (Bassick Mine Syndicate)	5	135	39.94	166
Bayern (Netta & Sturm)	5	12	3.29	14
Bill's Luck (C. Garber)	2	92	21.70	90
Blanket (clean up)	—	—	58	2
Boomani (J. M. Stone)	5	80	42.15	175
Bunney's Luck (clean up)	—	—	2.74	11
Bushy Park (Berwitz & Robinson)	2	140	69.61	289
Cart Wheel (J. Cook)	3	50	59.26	246
Cecil (Master Cecil Syndicate)	3	48	21.02	87
Carry (Boomerang Syndicate)	1 11	291	77.14	320
Do. (sands)	—	158	40.99	170
Citron (W. Mackenzie)	—	—	4.36	18
Clifton (slimes)	—	700	27.63	115
Column	5	490	105.50	437
Do. (sands)	—	285	22.25	92
Coquette (W. H. Robinson)	2	193	67.28	279
Cottage (Cottage Syndicate)	4	182	72.66	301
Donove A. (W. K. Early)	2	31	28.43	118
Durban (Durbau Syndicate)	2	225	174.89	725
Do. (sands)	—	140	75.28	312
Eagle A. (Macdonald & Co.)	10	1,144	197.79	820
Do. (sands)	—	480	44.30	184
Elumba A. (E. W. Bosomworth)	5	600	111.72	463
Ettie (Ettie Syndicate), sands	—	450	66.86	277
Excelsie (Excelsie Syndicate)	2	62	30.02	124
Farvie (H. S. Henderson)	5	713	187.45	795
Do. (sands)	—	535	15.71	67
Fornly (Blanket Syndicate)	3	218	112.45	466
Franklin (E. Bach)	5	350	54.41	225
Frank's Luck (R. Aserman)	5	642	88.43	366
Fred (Trans. & Rhod. Est.)	10 21P	1,850	1,042.73	4,322
Do. (sands)	—	1,850	308.44	1,279
Geelong (Hogg & Co.)	10	1,100	236.62	981
Germania (W. Hadingham)	2	206	124.70	517
Godwin B. (F. C. Barrett)	5	190	153.57	637
Do. (sands)	—	135	10.66	44
Great Belingwe (R. C. Boyes)	5	621	194.37	806
Do. (concentrates)	—	2	9.36	39
Gwen (McDonald & Co.)	(10)	115	23.87	99
Intabauenda (Intabauenda Synd.)	5	436	97.84	406
Do. (sands)	—	410	38.01	158
Jeffs (Horton & Stewart)	3	290	121.85	505
Jessie (Harrill & Smith)	—	700	140.36	582
Jumbo (A. D. Hall)	5	400	91.21	378
Jumpers (J. P. McCoy)	5	380	164.23	681
Do. (sands)	—	240	61.13	253
Kernel (E. Farrer)	5	170	41.40	172
Kone Ham (Armstrong & Furber)	5	420	197.17	817
Do. (sands)	—	300	53.79	225
Lonely Reef G.M. Co., Ltd.	20 3T	5,290	711.09	2,948
Do. (slimes)	—	5,290	2,796.83	11,594
Long John (Savanna Mines, Ltd.)	2 4r	3,904	470.15	1,949
Lucknow (McNunice & Ettie Synd.)	3	570	101.22	420
Mayfair (Arbery & Hicks)	5	300	41.85	173
Matabele Queens Co., Ltd.	10	1,780	343.01	1,422
Do. (sands)	—	1,780	372.61	1,545
Do. (slags)	—	—	31.80	127
Mamba (Nicholls & Co.)	5	320	145.92	605
Do. (sands)	—	214	19.43	80
Mons	5	45	17.51	73
Mulloch (P. J. Pickering)	2	60	28.59	118
Nelly (P. D. Roseoe)	3 11	880	404.82	1,691
Do. (sands)	—	300	156.62	649
Do. (slags)	—	—	90.66	376
New Eclipse (J. R. Stewart)	5 1T	1,380	263.44	1,092

	No. of stamps.	Tons treated.	Yield. ozs.	Value. £
Old Nic (Chart. & Gen. E. & F. Co., Ltd.)	154P	2,460	841.61	3,489
Do. (sands)	—	1,488	152.80	633
Old Caledonia (W. K. Early)	2	50	31.23	129
Peach A. (Peach Syndicate)	5	300	555.46	2,303
Do. (sands)	—	200	25.14	104
Princess (C. A. Abbott)	2	207	41.33	171
Prince Olaf (K. Johnsen)	5	135	119.43	495
Progress (Progress Syndicate)	2	183	195.22	809
Queens West (Cummings & Berry)	5	665	188.00	779
Rex (P. D. Crews)	5	283	51.16	212
Rosy Morn (J. W. Rose)	2	58	19.37	80
Sachsen (Netta & Sturm)	5	25	17.15	71
Slope (E. E. Becroft)	5	726	113.18	469
Star (Romola Nigel G.M. Co.)	5	412	87.35	362
Do. (sands)	—	180	50.81	211
Teutonic (W. & A. Syndicate), concentrates	—	—	39.44	163
Woolley Dog (P. H. Davis)	2	200	263.54	1,092
Do. (sands)	—	200	87.21	362
Other sources	—	—	30.83	125
Bulawayo district total			15,753 71	65,315

GWelo DISTRICT—

Alderman (Williams & Woodger)	5	480	126.65	525
Anniversary (R. F. Dollar)	2	37	40.18	167
Arpatrick (C. Malcham)	3	65	138.18	573
Bell Reef Dev. Co., Ltd.	2B 1T	4,161	1,906.90	7,905
Bonsor B323 (Cornish Syndicate)	10	1,000	227.18	942
Do. (sands)	—	825	38.28	159
Bonsor B327 (T. Roberts)	10	850	114.20	473
Camelia	10	1,295	231.93	961
Do. (sands)	—	1,140	92.00	384
Cactus (Renton & Gray)	5	416	73.58	304
Do. (sands)	—	556	74.60	309
Csardas (Wolfshall Syndicate)	10	485	441.10	1,828
Do. (sands)	—	360	47.58	197
Do. (slimes)	—	125	8.86	37
Emerald (Beston & Ham)	2	350	176.52	732
Do. (sands)	—	300	37.75	156
Falcon Mines, Ltd.	34 3T	19,470	3,213.47	13,497
Do., copper, £13,808.				
Fed Up (A. Malcolm), clean up	—	—	55.72	231
Gaika G.M. Co., Ltd.	5 1C	3,279	1,436.08	6,032
Do. (sands)	—	1,394	67.51	283
Do. (slimes)	—	4,200	252.75	1,062
Glen Hume (Hume, Withey and Walker)	5	830	118.90	493
Glen Rosa (Glen Rosa Syndicate)	10	1,100	524.38	2,174
Do. (sands)	—	500	143.19	594
Globe and Phoenix G.M. Co., Ltd.	40 10P	6,569	5,960.53	25,034
Do. (sands)	—	6,862	1,520.62	6,387
Do. (slimes)	—	2,376	538.30	2,261
Do. (concentrates)	—	324	355.04	1,491
Holiya (J. T. Woods), sands	—	210	11.47	48
Ingersoll (C. T. Uren)	2	52	28.38	118
Leopard (Leopard Trib. Synd.)	5	560	108.97	452
Lilian (P. McConkey)	2	200	47.31	196
Meg (J. M. Hayran)	2	671	111.67	463
Montagu (J. C. Dornbrack)	2	42	11.21	46
Moss (W. M. James)	5	981	733.53	3,041
New Durraven G.M. Co., Ltd.	5	840	111.70	463
Do. (sands)	—	476	20.41	85
Pacific (Wanderer Selukwe G.M.)	—	325	21.93	91
Pagamesa (W. H. Pearl)	15 21P	637	276.58	1,147
Do. (sands)	—	505	73.61	305
Patoscar (O. T. Taylor)	5	250	36.09	150
Pondo (E. C. Luxat)	5 111	1,500	171.58	711
Do. (sands)	—	464	53.01	220
Record (Pini & Wearing)	5	600	69.89	290
Renvyle (A. & B. Syndicate)	5	430	43.25	179
Rumney (T. Pedlow)	5	165	48.19	200
Selukwe Columbia G.M., Ltd.	10 11P	386	102.63	425
Do. (sands)	—	186	45.62	189
Wonderland	—	1,068	343.61	1,424
Do. (sands)	—	626	152.74	633
Yankoe Doodle	10	1,539	184.63	766
Do. (sands and slags)	—	1,026	114.30	474
Shamrock (H. H. Crampin), sands	—	1,000	34.62	143
Sixteen (F. G. Shaw)	2	275	80.43	334

	No. of stamps.	Tons treated.	Yield ozs.	Value £
Tubewke L. (A. N. Tyrrell)	15	860	242.33	1,604
Do. (sands)	—	1,485	208.37	864
Umpali (Bolt & Reed)	5	300	97.50	404
Val d'Or	5	209	59.47	247
Vedder (C. Johnson)	2	163	46.40	192
Do. (sands)	—	612	165.42	666
Veracity (L. R. Evans)	2	200	55.85	231
Do. (sands)	—	320	99.42	412
Walrus (J. Jonece)	6	100	17.42	72
Wanderer (Selakwe) G.M., Ltd.	4GR	13,165	1,274.76	5,284
Winning Post (Hughes & Dowes)	5	356	82.66	342
Wolfschall (Wolfschall Syndicate)	10	200	95.20	395
Do. (sands)	—	150	19.81	82
Do. (slimes)	—	50	4.00	16
Zabonkwe (Holmes & Crughart)	5	800	44.47	184
Do. (sands)	—	570	138.00	572
Other sources	—	—	4.10	17
Gwelo district total			23,654.72	98,787

MASHONALAND.

HARTLEY DISTRICT—

Agnes (P. S. Triggs)	5	200	61.98	257
Arlander (Koir & Rooke)	10	1,650	66.16	274
Do. (sands)	—	1,650	214.98	891
Baltimore & Virginia (P. A. Enke)	5	563	50.50	230
Brilliant (Mabel's Luck Syndicate)	5 1P	347	56.63	235
Do. (sands and slimes)	—	215	120.99	502
Buffalo (E. A. Begbie)	5	670	229.33	951
Cam and Motor G.M. Co., Ltd.	—	13,319	4,232.79	17,924
Do. (slimes)	—	1,850	81.13	344
Campania (G. C. Hooper)	3	559	67.27	279
Do. (sands)	—	180	88.46	367
Concession Hill and W. Ext. (C. E. Simpson)	—	1,675	199.79	828
Do. (sands)	—	1,120	71.25	293
Dalry (Macdonald & Sale)	5 1C	1,755	78.80	327
Do. (sands)	—	1,755	136.49	566
Dalry 1 W. (Macdonald & Sale)	5	500	72.16	299
Do. (sands)	—	300	40.31	167
Dawn (Arrow Syndicate)	5 1P	666	322.59	1,337
Do. (sands)	—	297	35.21	146
Eiffel Blue (Willoughby's Con. Co.)	10	1,554	774.47	3,211
Do. (sands)	—	930	49.52	205
Elleen Alannah Mining Co., Ltd.	12 2T	4,003	684.37	2,837
Do. (sands)	—	5,359	1,332.79	5,525
Emery Ext. (E. G. Goodyer)	5	480	123.63	513
Do. (sands)	—	304	36.74	152
Fiasco Kaiser (Attilio & Mikellatos)	5	200	58.95	244
For Cash Only (Bray & White)	1 Pn	15	7.07	29
Giant Mines of Rhodesia, Ltd.	30 2T	8,100	1,080.80	4,479
Glasgow Mines, Ltd.	5	474	118.90	493
Do. (sands)	—	250	44.89	186
Glasgow B. (R. McInnes)	2	30	6.12	25
Glencairn (Pickstone G.M., Ltd.)	5	716	601.56	2,494
Golden Valley (J. Mack)	10	1,244	720.10	2,985
Do. (sands)	—	725	148.30	615
Guelph (J. and M. Davidson)	3	117	22.12	92
Grampian (Heard & Smith)	2	95	28.99	120
Inez (L. Hyland)	10	1,200	120.77	501
Do. (sands)	—	840	66.37	275
Inkerman (I. J. Minnaar)	5	300	148.39	615
Do. (sands)	—	250	53.69	223
Kanyemba (Kanyemba Synd.)	10	915	181.54	753
Do. (slimes)	—	520	36.85	153
Lex	5	74	35.65	148
Do. (sands)	—	62	13.72	57
Midlothian (A. F. Johnston)	5	76	24.45	110
Monte Carlo (R. W. Taylor)	1 11	25	10.19	42
Mudale	5	450	87.20	361
Oleander (O. T. de Villiers)	3	450	64.60	268
Do. (sands)	—	450	74.59	309
Orchard (Dr. J. Laing)	5	610	145.30	602
Do. (sands)	—	400	8.20	34
Owl (A. Rolf)	10	1,521	1,033.29	4,283
Do. (sands)	—	1,190	404.35	1,676
Owl Extension (Cribb & Secar)	5	780	191.23	793
Do. (sands)	—	682	71.01	294
Pomposo (J. Knott)	5	632	58.74	243
Do. (sands)	—	575	76.85	319
Revio (R. R. Aitken)	5	790	151.87	630
Do. (sands)	—	650	67.30	279
Ross (E. H. Walsh, sands)	—	50	5.05	21
St. George (J. Hussy)	2	150	35.39	147
Soigneury (Soigneury Syndicate)	10	990	201.13	834
Do. (sands)	—	920	40.49	168
Shepherds (Phoenician (Rhod.) Co.)	5 1T	930	133.73	554
Do. (sands)	—	930	85.27	353
Thistle-Etna G.M., Ltd.	1 C	1,232	236.68	983
Do. (sands)	—	1,160	102.44	425
Venice (B. B. & P. Syndicate)	1 C	725	20.00	83
Do. (sands)	—	725	64.42	267
Victoria (V. L. Syndicate)	—	—	6.14	25
Village Main (clean up)	—	—	14.37	60
Virgin	2	58	4.41	18

Washington (I. J. Minnaar, pigs)	—	—	22.46	93
What Cheer (H. Moser)	5	432	2'6-85	858
Do. (sands)	—	625	86.4	334
White Rose (White Rose Syndicate)	2	101	42.49	176
Other sources	—	—	1.19	5

Hartley district total

16,511.62 68,794

LOMAGUNDI DISTRICT—

Augwa (F. L. Standen)	5	732	76.3	316
Chiringa (Chiringa Syndicate)	5	529	47.10	195
Colorado (Digger Syndicate)	5	330	13.77	57
Do. (sands)	—	160	5.88	24
Eldorado Banket G.M. Co., Ltd.	20 1C 4P	4,072	1,907.18	8,022
Do. (sands)	—	4,228	413.84	1,738
Golden Kopje Prop. Mines, Ltd.	60 3T	14,453	750.73	3,153
Do. (slimes)	—	14,453	1,699.1	7,136
May W. Exten (May Syndicate)	5	350	72.43	300
Do. (sands)	—	220	28.49	118
Meditraneo	5	60	13.23	55
N.G.F. Main West (E. A. Schley)	2	84	28.76	119

Lomagundi district total

5,656.81 21,235

MAZOE DISTRICT—

Ancient & Modern (L. W. Southy)	—	48	19.74	82
Botha H. (Clarkson & Sone)	2 11	1,775	34.35	142
Do. (sands)	—	550	47.27	196
Chin (Arrow Syndicate, Ltd.)	5 1P	583	152.75	633
Do. (sands)	—	583	68.69	285
Day Dawn	2	48	16.94	70
J. O. (E. W. Lannin)	2	302	61.00	253
Jumbo G.M. Co., Ltd.	20	2,000	308.00	1,277
Do. (sands)	—	1,218	55.38	230
Do. (slimes)	—	782	37.28	154
Do. "Reno" sands	—	182	8.27	34
Do. "Reno" slimes	—	118	5.56	23
Kimberley (Mash.) G.M. Co., Ltd.	8 2T	4,750	785.92	3,330
Do. (sands)	—	1,800	291.73	1,237
Do. (slimes)	—	3,000	271.36	1,151
Kingsley Hoard (A. S. Warwick)	5	684	149.64	620
May (Van der Berg & Ricardo)	3	95	7.42	31
Micky (Micky Syndicate)	2	315	268.12	1,111
Moffat (Laing & Marshall)	2	208	83.90	348
New Darwin (G. Brown)	4	400	82.48	342
Promoter (F. C. Croxford)	1 C	1,834	66.25	275
Do. (sands) (B. H. Jones)	—	1,500	59.44	216
Shashi (C. Laland)	2	109	9.86	41
Venus (J. W. Giles)	—	150	32.65	135
Yellow Jacket (J. J. Bayer), sands	—	160	6.64	28

Mazoe district total

2,929.94 12,274

SALISBURY DISTRICT—

Alpes (P. Zaffre)	5	301	342.85	1,421
Do. (sands)	—	414	32.80	136
Asoka (R. Athey)	3	12	10.87	45
Beatrice (New Beatrice G.M. Co.)	10	1,080	463.24	1,920
Do. (sands)	—	630	64.60	268
Black Cat (Black Cat Syndicate)	2	260	81.55	338
Celtic (Cundill & Mackay)	2	130	19.66	81
Ceylon (Ceylon Syndicate), slimes	—	—	45.30	188
Cross-vour-Luck (Seb. and District Mines)	2 1P	280	43.47	180
Do. (slimes)	—	280	135.80	563
Found A. (Guy's Syndicate), sands	—	365	67.94	282
Joker (Harris & Drabble), sands	—	567	108.75	451
Joking (do.)	2	355	518.90	2,151
Kenilworth (Kenilworth Synd.)	2	161	21.11	87
Koodoo (Tryon & Daniel)	5	54	13.94	58
Do. (sands)	—	70	10.46	43
Lienad (Tryon & Daniel)	(5)	157	41.00	170
Louise Grand (H. S. Plant), sands	—	710	30.52	126
Mashona (H. S. Plant)	2	139	68.62	284
Mont d'Or (Claxton & Bussell)	5	422	81.26	337
New Comet (Ellenoor & Phelps)	5	450	85.65	355
Norseman (F. Johnson)	3	30	13.36	55
Olympus (C. Harris & Cunningham)	—	500	97.35	404
Planet (Planet Tribute Syndicate)	10 2P	1,025	183.81	762
Do. (slimes)	—	1,025	187.96	779
Radnor (London & Rhodesia M. and L. Co.)	5 2P	905	341.66	1,416
Shamva Mines, Ltd.	56 8T	49,428	3,001.18	13,372
Do. (sands)	—	26,630	3,326.00	13,969
Do. (slimes)	—	21,252	2,469.44	10,372
Southern Cross (H. G. Bateman)	2	82	17.37	72
Trio (Trio Syndicate)	5	350	129.06	535

Salisbury district total

12,055.48 51,222

UMTALI DISTRICT—

Battery (F. E. Markham)	—	—	5.24	22
Bessie and Gem (J. Buchanan)	5	1,010	34.90	145

	No. of stamps, treated.	Tons	Yield. ozs.	Value. £
Do. (sands and slimes)	—	216	78.76	326
Constance (J. F. Kapnek)	5	736	98.67	409
Grand Manika	5 1H	750	49.13	204
Kent Mines, Ltd.	10	1,113	330.88	1,372
Do. (sands)	—	800	66.67	276
Lisboa (P. M. Branken)	5	123	7.33	30
Liverpool 38 (R. G. Snodgrass)	5	600	79.43	329
Do. (sands)	—	200	36.17	150
Montezuma (E. A. Banning)	10	1,100	12.59	52
Do. (sands)	—	300	108.94	452
Rezende Mines, Ltd.	70	11,500	1,026.59	4,356
Do. (sands)	—	3,250	260.67	1,106
Do. (slimes)	—	1,364	109.48	464
Do. (concentrates)	—	108	365.06	1,549
South Perthshire (J. Meikle)	10	621	120.70	500
Do. (sands and slimes)	—	420	63.97	265
Surrey (Cawood Bros.)	5	350	54.75	227
Do. (sands)	—	270	18.18	75
Umtali (J. Meikle), clean up	—	—	355.79	1,369
Virginia (F. Young)	1 H	421	105.15	436
Umtali district total			3,369.05	14,114

VICTORIA DISTRICT—

Empress (S.A. Pros. & Con. Synd.)	8	1,300	163.61	678
Do. (sands and slimes)	—	853	132.43	549
Ruby (E. Frankis)	5	40	8.53	35
Runbeam (Douglas & Durrell)	5	571	156.25	648
Texas (P. S. Warden)	5	930	307.19	1,273
Do. (sands)	—	400	20.33	84
Vulcan (E. Frankis)	3	22	15.64	65
Wake Up John (S. Hemlock)	2	82	71.04	295
Victoria district total			875.02	3,627

British and German War Finance.

GERMANY'S GOLD DEARTH AND PAPER FLOODS.

In an address to the members of the London Chamber of Commerce at a recent meeting presided over by Lord Southwark, Mr. Edgar Crammond made an interesting comparison between English and German war finance. In the course of his address he pointed out that there is good reason to believe that early in 1913 the German Government determined to declare war in July, 1914. On the 28th March, 1913, the German Army Bill was laid before the Reichstag. It provided for a total increase of establishment amounting to 4,000 officers, 15,000 non-commissioned officers and 117,000 rank and file. With these additions the total strength of the German Army on 1st October, 1913, was 793,278. The Bill made provision for an outlay of about £4,000,000 on the Army aerial service and for enormous outlays upon fortresses, war equipment, etc. The total costs of the new military and naval proposals were estimated at £63,474,157. The Act provided for the coining of a serviceable stock of silver to the extent of £6,000,000 and the issue of 5 and 10 mark notes to the aggregate amount of £6,000,000, to be exchanged for a like amount of gold then in circulation in the Empire. The £6,000,000 gold set aside out of the indemnity received from France in 1870, and until then kept in the Julius Tower at Spandan, was transferred to the Treasury of the Reichsbank, where it was, together with the additional amount of £12,000,000 in gold and silver, kept strictly apart from the commercial reserves of that institution. From the date of the passing of this Army Act—namely, 30th June, 1913—the German demand for gold was one of the most noteworthy features of the London Money Market. At the beginning of 1910, the year before the Agadir difficulty, there was only about £30,000,000 gold in the Reichsbank. In January, 1911, the year of the Agadir difficulty, she had about £40,000,000; in January, 1913, it held £45,000,000; and in January, 1914, it held about £60,000,000. Germany increased her holding of gold during those years by keeping up her bank rate to 5 and 6 per cent.; by selling exchange on London to prevent gold leaving Germany; by threatening her bankers if they dared to export gold; by taking from England large amounts of South African gold at a loss; by putting out small notes in order to drive gold into the banks; by coining silver

	GRAND TOTAL.	Value.
Gold, ozs.	80,205.25	£335,368
Silver, ozs.	18,024.61	1,719
Copper, tons	288.41	14,420
Coal, tons (sales)	35,388.00	10,209
Chrome iron, tons	6,300.00	18,281
Asbestos, tons	323.10	5,170
Diamonds, carats	78.00	365
Ironstone (three months), tons	2,865.00	358
Grand total value		£385,890

GOLD OUTPUT COMPARISONS.

	Ounces.	Value.
March, 1915	71,733.32	£299,680
March, 1916	80,205.25	335,368
Increase	8,471.93	£35,680
February, 1916	75,171.32	313,760
March, 1916	80,205.25	335,368
Increase	4,033.93	£21,599

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and putting it into circulation in the place of gold. "Since the outbreak of war," Mr. Crammond continued, "there are no data available to show the outflow of gold from the Reichsbank. During the early stages of the war the amount varied between £50,000 and £1,000,000 per week. The huge additions which have been made to the gold reserves of some of the banks of the neutral States, whose frontiers march with those of Germany, point to the conclusion that the outflow of gold from Germany must have been on a very large scale. It is extremely significant that neither the present holding of gold nor the amount of notes issued by the Austro-Hungarian State Bank has been published, and it is pretty clear that the financial claims of Turkey and Bulgaria and the payments to Rumania must have made a heavy inroad into the gold reserves of Germany and Austria. I am of the opinion that the scepticism which exists throughout the world as to the accuracy of the official statements as to the exact amount of gold held by the Reichsbank is well founded. The great weakness of the war finance of Germany is the flooding of the country with paper money." "The financial outlook for Germany is desperate. In 1913 Dr. Helfferich estimated the national wealth of the Empire at £15,000,000,000. What is it worth to-day? Her colonies have gone. Her shipping industry is ruined. The best of her foreign investments have been sold, and the remainder may prove worthless. The goodwill of her foreign trade in the Allied countries is valueless. In 1911 45.7 per cent. of her imports came from the countries with which she is now at war, and 38 per cent. of her exports went to those countries. I am inclined to believe a report which has reached me from a Swedish source that the German Government has decided already in principle that immediately on the conclusion of peace she will attempt to raise an enormous foreign loan, ranking in front of all the war loans, and bearing a very high rate of interest—that is to say, she will, in effect, repudiate her internal war debt. I do not believe that Germany is living and fighting solely upon what she is producing. She is living upon the fat which she accumulated during the past 40 years of intensive economic development. The system of war finance which she has adopted is a marvellously efficient machine for enabling the German people to attempt to live and fight by "taking in each other's washing," but this method of finance will not enable Germany to carry on for any great length of time the greatest and most expensive war in the history of the world."

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THE WEEK IN THE SHAREMARKET.

Far East Favourites Firm—Some Weak Spots—Daggafonteins Slightly Better.

The market has been suffering from what might be termed the reflex action of the Irish trouble. Prices, however, have not been materially effected so far as the better class stocks are concerned, such as the Modder trio, Van Ryn Deeps, Springs Mines, Brakpans, City Deeps, Coal Trusts, Pretoria Cements, Government Areas and Gedulds; the last-named suffering perhaps the heaviest set back. On the whole Bantjes may be said to have received the biggest shaking up, or more properly speaking, shaking out, with one partial rally and another relapse. Leeuwpoot Tins were also at a discount, followed sympathetically by African Farms, but in both cases a partial recovery has followed. Randfonteins hardened up somewhat; but did not maintain their improved position for long. All interest seems to have died away in Knight Centrals and East Rands. Steady and consistent buying has raised the price of Sub Nigels without any apparent chance of a relapse. Speculation in small stocks has been much reduced, most of the buying being limited to Lace Props., S.A. Lands, Lydenburg Farms and Cloverfields. The Daggafontein market has been quiet with rather better demand for the old stock than the new. Tins are unchanged, with a slight improvement in Swazis. The arrival of several shipments of Henderson's Consolidated and options, to make a market, has not yet had the effect of hardening their prices, which have been on the down grade from the time of the first extensive dealings ex-London. On Friday morning prices were unchanged with the exception of Bantjes and Knight Centrals, whose weakness was further accentuated by sales of the former at 14s., and sellers of the latter at 11s.; Randfonteins were also easier.

	Fri. 23th.	Sat. 24th.	Mon. 1st.	Tues. 2nd.	Wed. 3rd.	Thurs. 4th.
African Farms...	11 3/4	10 0/8	10 0	10 4	10 3/4	10 4/8
Apex Mines...	5 10/8	5 10/8	5 10/8	5 11/8	5 11/8	5 11/8
Bantjes Cons. ...	16 4/8	15 10/8	15 0	16 2	15 1	15 3/8
Brakpan Mines	77 0/4	75 0	—	75 0/8	76 0/4	75 0/8
Breyten Collieries	—	—	20 0/8	20 0	—	20 0/8
Brick and Potteries	—	—	5 0/8	—	—	—
Bushveld Tins	0 7/4	0 7/8	—	0 7/8	—	0 7/8
Cassell Coals...	20 0/8	—	—	—	20 6/8	20 0/8
Cinderella Cons.	7 0/4	6 9/8	6 6/8	—	6 9/8	6 9/8
City and Suburbans	34 0/4	34 0/8	34 0/8	34 0/8	34 0/8	33 6/8
City Deeps	74 6/8	74 0/8	74 6/8	75 6/8	76 0	75 3/8
Cloverfield Mines	8 9/8	8 9/8	8 8	8 9/8	9 4	8 10/8
Clydesdale Collieries	14 6/4	—	—	14 6/4	14 6/4	14 6/4
Concrete Construction	1 6/8	—	1 9/8	1 6/8	1 6/8	1 6/8
Cons. Investment	—	—	—	17 0/8	—	—
Cons. Langlaagtes	33 6	33 3/8	33 6	33 3/8	33 6/8	—
Cons. Main Reefs	19 3/4	19 6/8	19 6	19 3/8	19 0/8	19 6
Cons. Mines Selection	17 6/8	17 0	—	17 0/8	17 6/8	17 6/8
Coronation Collieries	—	—	—	30 0	—	—
Coronation Freeholds	0 5/8	0 4/8	0 4/8	0 5/8	0 5/8	0 4/8
Crown Diamonds	1 9/8	1 9/8	1 9/8	1 9/8	1 9/8	—
Crown Mines	—	50 0/8	50 0/8	50 0/8	50 0/8	50 0/8
Crown Mines Debentures	£100/4	£100/4	—	—	£100/4	—
East Rand Centrals	8 2/8	8 2/8	8 2/8	8 1/8	8 0/8	8 1/8
East Rand Coals	3 7	3 6/8	3 8	3 10/8	3 9/8	3 8/8
East Rand Deeps	1 10	1 8/8	1 8/8	1 7/8	1 8/8	1 7/8
East Rand Mining Estates	19 0/4	16 0/8	19 0/4	17 0/8	—	—
East Rand Props.	15 3/8	15 0/8	15 3/8	15 0/8	15 0/8	15 0/8
East Rand Debentures	—	£78/8	£78/8	£78/8	£78/8	£78/8
Eastern Gold Mines	—	1 8/8	1 6/8	1 6/8	1 11	1 10
Frank Smith Diamonds	2 0/4	2 3/8	2 3/8	2 6/8	2 6/8	2 7/8
Geduld Props.	44 9	44 3/8	44 3/8	44 3/8	44 6/8	44 3/8
Glencairn	—	2 0/8	2 6/8	—	2 0/8	—
Glencoe Collieries	7 0/4	—	7 0/8	7 0/8	7 0/8	—
Glyn's Lydenburgs	12 6/8	12 6/8	12 6/8	13 0/8	13 6/8	—
Gorz & Co.	—	—	—	13 9/8	—	13 9/8
Government Areas	34 0/4	34 0	34 4/8	34 0	33 9/8	33 9/8
Jupiters...	6 9	6 6/8	6 6/8	6 6/8	6 6/8	6 6/8
Klerksdorp Props.	—	2 3/4	—	1 9/8	—	1 9/8
Knight Centrals	14 6/8	14 3/8	14 3/8	14 8	14 6	14 3/8
Knights Deeps	21 0/4	—	—	—	—	—
Lace Props.	7 6	7 6	6 11	7 7	7 4/8	7 0
Luipaardsvlei Estates	—	8 6/8	8 0/8	8 0/8	8 0/8	8 0/8
Lydenburg Farms	8 9/8	8 8	8 9/8	8 5	8 6/8	8 3/8
Leeuwpoot Tins	—	—	—	—	—	17 3/8
Main Reef Wests	8 0/4	7 9	7 8	7 11	7 9	7 6/8
Meyer and Charltons	105 0/8	—	—	—	—	—
Middelvlei Estates	1 6/8	1 6/8	—	2 0/4	1 4/8	1 3/8
Modderfontein B...	129 6	129 0	128 0/8	128 6/8	128 6/8	127 6/8
Modder Deep Levels	128 0	128 0	126 6/8	127 0/8	127 6/8	126 0/8
Natal Navigation Colls.	16 0/8	—	16 6/8	16 6/8	16 6/8	16 6/8

AAdd lots. BEx London. *Buyers. †Sellers.

	Fri. 23th.	Sat. 24th.	Mon. 1st.	Tues. 2nd.	Wed. 3rd.	Thurs. 4th.
National Banks	222 6/8	225 0/8	—	225	—	225
New Boksburgs	2 3/4	2 3/4	—	1 6/8	1 8	1 8
New Bland Diamonds	17 0/8	20 1/4	20 1/4	19 0/4	17 0/8	17 0/8
New Era Cons.	6 9/8	2 3/8	3 7/8	8 9/8	8	9 1/4
New Geduld Deeps	5 7	5 8	5 4	5 9	—	5
New Gochs	—	—	—	14 1/4	—	15 0/8
New Horatia	53 0/8	—	55 1/4	55 1/4	53 5/8	55 5/8
New Kleinfonteins	3 1/4	3 9/8	3 3/4	3 3/4	3 6/8	3 9/8
New Modderfonteins	—	337 6	340 1/4	334 0/8	—	337 6/8
New Rietfonteins	6	11 1/4	8 1/4	9 9/8	9 1/8	1 6/8
New Unifeds	11 1/8	—	—	—	11 0/8	11 1/8
Nigels	6 0/8	6 0/8	6 1/8	6 0/8	6 6/8	6 0/8
Pretoria Cements	68 6	68 1/8	69 1/8	69 0/8	69 0/8	69 0/8
Princess Estates	2 0/8	2 0/8	2 0/8	3 3/4	2	3 1/4
Rand Collieries	3 6/8	3 6/8	3 0/8	3 3/8	3 3/8	3 3/8
Rand Klips	8 4	8 0	7 7/8	8 0/8	8 3/8	—
Rand Nucleus	2	2 0/8	1 1/8	2 1/8	—	2 1/8
Randfontein Deeps	3 9	3 11/8	3 11/8	3 11/8	4 1	—
Randfontein Estates	13 3	13 0/8	13 0/8	13 6/8	14 6	13 6
Rooiberg Minerals	14 6	14 6/8	14 6	14 6	14 6	14 1/8
Roodepoot Uniteds	7 6/8	7 6/8	8 1/8	7 9/8	7 6/8	7 6/8
Ryan Nigels	—	2 0	—	—	2 0	2 6
Shabus	1 6	2 6/8	—	—	—	2 6/8
Simmer Deeps	1 1/4	1 9/8	—	1 6	1 3	1 6/8
S.A. Breweries	—	23 6	—	—	—	28 6/8
S.A. Lands	6 4/8	6 2	5 11	6 0	5 11/8	5 11/8
Springs Mines	53 9	53 9	53 9/8	56 1/8	55 9	55 1/8
Sub Nigels	—	13 3	13 3	13 6/8	14 1/8	14 1/8
Swaziland Tins	24 0/4	24 0/8	—	25 0	25 0	25 0
Transvaal and Delagoa	—	42 0	—	—	—	—
Transvaal Coal Trust	65 3	65 3/8	65 0	67 0	68 6	68 1/8
Transvaal Lands	15 6/4	15 6/4	15 6/4	15 6/4	15 1/8	15 6/4
Transvaal G.M. Estates	21 6/8	—	21 6/8	23 6/8	21 0	2 6
Tudors	—	—	—	2 0/4	2 1/4	—
Van Ryn Deeps	66 6	67 0	66 6	66 3	66 3/8	69 0
Van Ryn Estates	—	—	—	47 6/4	—	—
Village Deeps	—	—	33 0	—	—	33 6/4
Village Main Reefs	20 0/4	19 0/4	—	—	20 0/4	19 6/4
Vogelstruis Cons. Deeps	—	—	2 1/4	2 0/8	—	1 9/8
Welgedachts	22 6/8	—	25 0/4	25 0/4	25 0	25 1/4
West Rand Cons.	6 6	5 0/8	6 3/8	—	—	6 6
Western Rand Estates	—	—	—	1 6/8	1 6/8	1 6/8
Withank Collieries	42 6	42 6/8	—	42 0/8	—	—
Witwatersrand	—	—	—	57 6/8	52 6/8	52 6/8
Witwatersrand Deeps	25 6	24 9/8	24 6	24 6/8	25 0	24 0/8
Wolhuters	10 9/8	10 6/8	9 0	9 0	—	9 6
Zaaiplaats Tins	12 0/8	12 6	11 9	12 0	12 0/8	12 0/8

AAdd lots. BEx London. *Buyers. †Sellers.

ANSWERS TO CORRESPONDENTS.

All inquiries addressed to the Editor must bear the writer's name and full address. We cannot reply to inquiries by letter, but telegrams with replies prepaid will be answered. Correspondents are requested to write their names and pseudonyms distinctly.

"C. C."—The Tanganyika Company only gets a proportion of the profits made on the output of its Union Minière subsidiary, and its financial position is so involved that there is little prospect of ordinary shareholders getting dividends in the early future. Mean time the end of the war will probably see a slump in copper, at any rate temporarily.

"E. H. S." (London).—We know nothing of the Oceana Development Co.'s shares offered by the Rand Mineral Exploring Co.

"R. E. M."—Write to the Secretary, Geological Society of S.A., Standard Bank Buildings.

"Dagga" (Soweto, Bechuanaaland).—(1) Dealt with fully elsewhere in this issue. (2) Not too speculative. (3) Yes.

"Constant Reader" (Florida).—All are pure speculations, upon which we cannot attempt to advise.

"Inquirer" (Krugersdorp).—(1) (a) and (b) Yes. (2) (a) About five years; prospects good. (3) Officially about six years. (b) Yes. (4) Speculative.

"Anxious."—Henderson's year ends on March 31. The annual report will be out shortly. A dividend is possible.

THE WEEK IN THE MINING MATERIAL AND ENGINEERING TRADES.

Mines Not Buying So Freely—Farmers' Purchases—More Electrical Goods Arriving—Timber Quietly on the Up Grade.

THERE is just the usual buying of consumable stores and machinery spares, as well as mining timber, at the beginning of the month. As regards the Witwatersrand, business is on the slow side, as a result of rather exhaustive enquiries being made as to the merchants' stocks, now actually held in Johannesburg, which are quite satisfactory. From the mines' point of view the authoritative report issued states that the merchants are in a position to keep the mines supplied with their ordinary requirements from month to month. Hence with the stocks already held by the mines, it places them in a happy position of confidence as regards their supplies being forthcoming for the next six months with little or no anxiety on their part. As a set-off against our local trade being indifferent, Rhodesia is coming in more freely, presumably because they find the Johannesburg market very useful to draw upon during war times. Several nice orders have been placed here recently from that quarter for trucks and tramway material, as well as a general assortment of mining stores; also it is said that during the Show week several small batteries with the necessary engine power have been placed, for small work in Southern Rhodesia.

The Agricultural Show.—The farmers purchased some farm engines, pumps, and yard machinery, but on the whole business was not great at the Show itself, but hopes are entertained of fairly decent orders eventually resulting. Sales were actually registered; windmill deep well pump, 2 in. delivery and 18 in. stroke, for £10. A steam pump, 10 in. x 6 in. x 12 in., with 4 in. suction and delivery, £30, and a 2 in. larger one for £40. A good class steam sinking pump, with 80 gallon capacity per minute went at £80. An ordinary 2½ in. suction and 2 in. delivery, with double handles, realised £5. These various items are mentioned to give an idea of the selling values. The second-hand building material yards were well patronised by farmers during the Show week and quite fair business passed, chiefly in old material for erecting farm outhouses, cattle shelters, and such like protection for the coming winter.

Along the Reef.—In an interesting interview with a contractor whose chief business is with the mines, it was gathered that the wave of economy has become very evident, as only urgent work is put out for tender. There is a little more doing on the Far Eastern Rand, but that is in connection with new works and additions.

THE MARKET IN BRIEF.

Steel plates are in plenty, as the big importers have already received big consignments in Johannesburg and others are on the water. However, neither British nor

American makers will accept orders to deliver for any given future dates, but this is a matter of little concern for the moment, as the stocks on hand and others already at the coast and shipped are, it is estimated, sufficient to meet our requirements for the next six months. One of the reasons for this is the keen competition existing between the British and American manufacturers. There is a shortage of 4 lb. drill hammers, mine picks are scarce and up 5s. per dozen in consequence, spanners are not easily obtainable, and they have advanced quite 50 per cent. during the past six months. High speed twist drills are also up 100 per cent. for the same period, because the Sheffield people practically monopolise the market for the very high class steels, and they have been much hampered by the demands from the Home Government. Files and all brass machinery fittings have risen quite 15 per cent. since the beginning of the year. The local iron and steel makers are more than full up with orders. Electrical goods are more plentiful and what with the slowing down of the mine buying, and less house and commercial contracts being given out, prices may ease off somewhat. The British shippers have been more fortunate of late in getting electrical bulky goods through, for in addition to actual arrivals here, there are more at the coast and on the water. British opal shades can be obtained again at 30s. per dozen. The ordinary lamps have not risen in price, but stocks are being absorbed, and so far they are not fully replaced by oversea arrivals; however, this is only a passing phase of the position, which is expected to be more than remedied during the present month. It would seem that as soon as decent stocks are in Johannesburg a revival may take place in contracting work, which has suffered owing to the uncertainty of obtaining a sufficient variety of electrical goods when once a job is started. Timber is so imperceptibly advancing in price that it is difficult to alter the standard list, nevertheless it has gone up another fraction of a penny per foot and is likely to still keep on the up grade, as the mines must have bulk and other timber to comply with the Government regulations as regards timbering shafts, etc. Mining pole timber has quietly receded in price after a little spurt a few months ago. Farmers and others, almost throughout South Africa, with a plantation, know that they can always get in a little ready money by taking advantage of the Johannesburg market, hence the general supplies are on the abundant side.

Oils, Paints, and Glass.—There is nothing special on just now, but business is quite fair for jobbing work, in consequence of the demand for houses being still pronounced, and prospective tenants usually require something done. The demand for plate and window glass is good, chiefly from

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the Reef and country districts. Stocks of glass are again quite fair. Prices throughout the trade are steady, but keen buyers can often pick up lines on the easier side.

Motor Spirit, Paraffin, etc.—About £800 worth of motor spirit has been burned in a fire at Pretoria this week, but that quantity will not disturb prices as stocks are plentiful and too large in the aggregate for such a small loss to affect local values. Paraffin has advanced another sixpence per cask. All this class of goods is expected to further rise through the cost and difficulty in obtaining shipping from New York. Some freights from there have risen since the war from 37s. 6d. per ton to 137s. 6d., and inflammable merchandise has advanced more especially when insurance and other incidentals are added.

REVISED PRICE LIST.

Approximate war prices, subject to quick change.—Mining and building hardware: Iron, imported, round up to 1 in., 27s. 6d.; $1\frac{1}{2}$ in. to 2 in., 13s. 6d.; $2\frac{1}{2}$ in. to 6 in., 25s. per 100 lbs. Do., square, up to 1 in., 27s. 6d.; $1\frac{1}{2}$ in. to $2\frac{1}{2}$ in., 13s. 6d.; $2\frac{1}{2}$ in. to 5 in., 25s. Plats, 3-16 in., 37s. 6d.; all from $\frac{1}{2}$ in. up, 25s. Angles, $\frac{1}{2}$ in. to 3-16 in., 30s.; $\frac{1}{2}$ in., 27s. 6d.; 5-16 in. to $\frac{3}{4}$ in., 25s., excepting 5 x 4 x $\frac{3}{8}$ in.; mild steel bar, $3\frac{1}{2}$ d. lb.; drill, $6\frac{1}{2}$ d. lb.; tool, $7\frac{1}{2}$ d. to 9d. lb.; steel plates, 10ft. x 4ft. x 1-16in., 27s.; do., $\frac{1}{2}$ in., and 3-16 in., 26s. 6d.; $\frac{1}{2}$ in. and upwards, 25s.; 10 ft. x 5 ft. x 1-16 in., 28s. 6d.; $\frac{1}{2}$ in. and 3-16 in., 26s.; 10 ft. x 6 ft. x 1-16 in., 28s. 6d.; 3-16 in. x 10 ft. x 4 ft., 26s.; $\frac{1}{2}$ in. up, 10 ft. x 1 ft., 25s. to 27s.; hexagon bolts, $\frac{3}{8}$ in. to 3 in., 8d. per lb.; over 3 in., 7d. lb.; $\frac{1}{2}$ in. up to $2\frac{1}{2}$ in., 50s.; $2\frac{1}{2}$ in. to 6 in., 47s. 6d.; $6\frac{1}{2}$ in. and over, 45s.; $\frac{3}{4}$ in. up to $2\frac{1}{2}$ in., 45s.; $2\frac{1}{2}$ in. to 6 in., 42s. 6d.; $6\frac{1}{2}$ in. and up, 37s. 6d.; $\frac{3}{4}$ in., $\frac{7}{8}$ in., and 1 in. up to $2\frac{1}{2}$ in., 40s.; $2\frac{1}{2}$ in. to 6 in., 37s. 6d.; 6 in. and up, 32s. 6d. 100lb. Nuts, $\frac{3}{8}$ in., 9d. lb.; $\frac{1}{2}$ in., 50s.; $\frac{3}{4}$ in. to $1\frac{1}{2}$ in., 47s. 6d.; $1\frac{1}{2}$ in. to $1\frac{3}{4}$ in., 52s. 6d. per 100 lbs.; 2 in., $7\frac{1}{2}$ d. per lb.; washers, $\frac{3}{4}$ in. and under, 35s., and above that size, 30s. per 100lb.; shoes and dies, 32s. 6d. to 35s. per 100lb.; rails, £20 per ton; picks, 4 lbs., 27s. per doz.; shovels, 32s. 6d. to 42s. 6d. per doz.; hammers, drill, $7\frac{1}{2}$ d. to 9d. lb.; hammer handles (best American), 14 in., 3s. 6d.; 24 in., 5s. 6d.; 30 in., 7s. 6d.; 36 in., 10s. 6d. per doz.; metal, anti-friction, 1s. per lb.; galvanised iron, 24 gauge, 6 ft. to 10 ft., 9½d., 11ft., 10½d., 12ft., 10½d.; 26-gauge, 6ft. to 10ft., all lengths, 8½d. to 8½d. per ft. all-round; flat galv., 18 to 24 gauge, 32s. 6d.; 26 gauge, 34s. 6d. 100 lbs.; floor brads, 30s.; ceiling, 30s.; wire nails, 27s. 6d. to 32s. 6d. per 100 lbs.; solder, 50 per cent., 1s. 2d. per lb.; locks, rim, 45s.; mortice, 60s. doz.; barbed wire, 22s. 6d. to 25s. 100 lbs. coil.

Timber: Deals, Baltic, 9 x 3, up to 16 ft., 11½d.; over, 11½d. to 1s. 0½d. (Oregon, 11½d.); flooring, $4\frac{1}{2}$ x $\frac{1}{2}$ and 6 x $\frac{1}{2}$, 5½d. to 6d. per sq. ft.; do., $4\frac{1}{2}$ x $\frac{1}{2}$, 6½d.; and 6 x $\frac{1}{2}$, 6½d.; Oregon edge grain, 6d. to 6½d.; ceilings, 6 x $\frac{1}{2}$, 3½d. to 3¾d. per sq. ft.; Oregon, 4 x $\frac{1}{2}$, 4½d.; pitch pine, 7s. 3d. to 7s. 6d. per cub. ft.; Oregon, 5s. 6d. per cub. ft.; clear pine, $\frac{1}{2}$ in. x 12 in., 7½d. per ft.; 1 in. x 12 in., 8d.; teak, small planks, 15s. per cub. ft.; do., large, 16s.; jarrah, 8s. 6d. per cub. ft.; poplar, 1 in. x 12 in., 9d.; scantling, 9 x 3, 11d. to 1s. per ft.

Bricks, cement, lime, etc.: Cement, nominal, 34s. 6d. per cask; Pretoria Portland, 9s. 3d. per bag; 8s. 3d., truck loads; lime, white, 7s. 9d.; truck loads, 6s. 9d., slaked; do., 5s.; blue, 3s. 6d.; plaster lime, 4s.; bricks at kiln, stock, 36s. to 42s.; wire cuts, 40s. to 50s. pressed, 65s. per 1,000, road transport now normal; salt and white glazed bricks, £27 10s per 1,000; tiles, roofing, £17½ square; glazed tiles, 10s. 6d. to 17s. 6d. yard; paving cement tiles, 8s. 6d. yard laid; terra cotta tiles, £15 per 1,000; reinforced concrete columns, 6 ft. plain, 22s. 6d., fluted, 24s.; fireclay bricks, £9½, good average, per 1,000; clay chimney pots, 80s. per doz.; fireclay, 37s. 6d. ton on rail.

Oils, paints, lead, oxides, glass: Linseed, raw, 30s. boiled, 31s. 6d. per 5-gall.; white lead, 72s. 6d. to 75s. per 100 lbs.; turpentine, 51s. 2/4 galls.; coal tar, imported, 10s. to 11s. per 5 galls.; oxide in oil, 32s. 6d. to 37s. 6d. per 100 lbs.; dry oxide, 21s. to 22s. 6d.; S.A. crude oxide, 12s. 6d.; linseed oil putty, 4s. 6d. per 12½lb. bladders; 30s. casks of 100 lbs.; grease A.F. axle, 23s. 6d. to 25s. per 100

lbs.; tallow, 9d. per lb.; White Rose paraffin, 15s. 6d. 2/5; Laurel do., 15s. 3d.; petrol, 26s. 6d. 2/4; motor oil, 6s. to 7s. 6d. per gallon; lubricating oils, 25s. per case; cylinder, 35s.; paints in tin, 10l. to 1s. per lb., according to quantity, and if ordered to be mixed, 15 per cent. on pre-war rates. British plate-glass, $\frac{1}{2}$ in., 3s. 6d.; do., mirror, 1s. 6d.; window, 16 oz., 1s. to 1s. 3d. ft.

Chemicals: Mercury, £18 10s. per 75lb. bottle; biechromate potash, 1s. 6d. lb.; chlorate, 2s. 6d. lb.; permanganate, 7s. 6d. lb.; alum, 9d. lb.; carbolic acid, 5s. 6d. lb.; borax, 60s. 100 lbs.; cyanide soda, 1s. 4d. lb.; hypo, 1s. lb.; acetate lead, 67s. 6d. 100lb.; litharge (assay), 75s., (commercial) 50s. 100 lbs.; zinc sheets and blocks, 1s. 3d. lb.; plumbago crucibles, 4½ per number.

Electrical Goods: Lamps, high volts., British, Holland & American, 10s. to 21s. wholesale, and 21s. to 27s. dozen, retail; carbon lamps, 7s. 6d. per dozen; pure rubber flex, 9d. to 1s. per yard; 3 20 coils of wire, 30s.; do., 3 22, 26s.; tubing, 12s. to 13s. 100 ft.; keyholders, 2s. 6d. each; round blocks, $3\frac{1}{2}$ in., 4s. doz., local; lamp holder cord grips, 15s. doz.; switches, 5 amp., 13s. to 14s. doz.; British glass shades, 24s. to 36s. doz.; Bohemian shades finished; porcelain shackles, 14s. 6d. doz.; do., bobbins, 16s. 6d. to 18s. 100; cleuts, 18s. per 100; P.O. insulators, 18s.; motors, 3 h.p., about £28 to £35, new.

PERSONAL.

The S.A. Institution of Engineers is paying a visit to the Johannesburg Municipal Power Station to-day (Saturday, May 6th), at 3 p.m. Members and friends meet at the Power station. Those who contemplate taking part in the visit are asked to notify the Secretary of the Institution.

* * * *

The certificates issued by the Mines Department for the period ended 29th April, 1916, were as follows:—Mine Managers' Certificates (Metaliferous Mines): E. H. Christopher, C. L. Lamb, C. S. McLean, R. L. Hewston, F. Laroque, J. N. Normand, A. Jenkin, V. F. S. Low, J. Jennings, G. McConnell and H. F. S. Turner. Mine Overseers' Certificates (Metaliferous): J. T. Andrew, W. L. Freeman, A. W. Paul, J. Angwin, L. W. Gray, I. Rees, E. G. Birch, A. F. Haddon, C. F. Roy, J. Brady, W. James, J. H. Stuart, T. Browning, J. T. Lambert, C. C. C. Tomlinson, H. B. Bull, P. McManus, D. van den Berg, C. W. Curtenay, G. F. A. Nisbeth, P. Williams, Y. H. M. Crosby, H. Pascoe, F. R. Williamson, C. Field-Libbis, J. Pascoe, R. Wilson. (Collieries): J. C. Fergusson, W. H. Hughes, E. Key, H. E. Morris. Mine Surveyors' Certificates.—J. E. Eaglesham, J. Grud, K. R. Shand, J. S. Ford, P. Kooij, A. W. J. Troye, P. J. Orlepp, R. R. Vail (Honours). Engineers' Certificates (Mechanical, Mines): W. Davies, G. Mair, W. Philip, S. F. Hendry, J. A. Mills, T. P. Smith, W. Heburn, J. S. Partington. (Electrical, Mines): J. A. Mills, J. S. Partington. (Electrical, Works): J. W. S. Clunas, W. H. Freemantle.

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The Week's Meetings.

EAST RAND CENTRAL MINES.

The fourteenth ordinary general meeting of shareholders of the East Rand Central Mines, Ltd., was held on April 28 in the board-room, Stock Exchange Buildings, Mr. A. A. Osborn presiding. There were also present Messrs. E. Hyman, A. S. Pearce, H. Hargreaves, H. Sothcott, F. R. Lynch, and J. S. Richardson, secretary.

The Chairman, in moving the adoption of the report and accounts, said: The revenue and expenditure statement before us shows a considerable improvement on the figures for the preceding year. Revenue has increased by £360 0s. 5d., while expenditure has decreased by £713 11s. 3d., or by £178 4s. 3d., as compared with the normal expenditure for 1914. The various items are clearly set out in the accounts and require little comment. You will note that a satisfactory reduction has occurred in the item "Sundry Debtors." Since the end of the year this account has been further reduced and now stands at £2,273 0s. 3d., which is £1,041 10s. less than the amount appearing under this head in the last balance sheet. Reference is made in the directors' report to negotiations which are proceeding for the disposal of your claims. I cannot usefully add anything at this stage to the information given in the report. I may mention, however, that the Board has no intention of using its powers to conclude a sale of the company's assets without the fullest reference to shareholders. As soon as we are in a position to submit a definite offer, a special meeting of shareholders will be convened at ample notice to consider the advisability or otherwise of confirming any provisional arrangement entered into by the Board.

The report and accounts were adopted, the retiring directors re-elected, and the auditors, Messrs. C. L. Andersson and Co. and Fraser and Mackenzie, were reappointed.

PRETORIA CEMENT COMPANY.

The annual general meeting of the Pretoria Portland Cement Company, Limited, was held on April 28, Mr. H. C. Boyd presiding. The others present were:—Messrs. C. Magge, F. J. Lunnop, P. Levy, D. Milne, F. Mann, C. Bramley, E. Davidson, and M. C. Bird (secretary).

In moving the adoption of the directors' report and accounts for the year ending December 31, 1915, the Chairman said:—

You will have seen that the erection of the new factory, which was referred to at the last annual meeting, has been proceeded with, and I am glad to be able to report that most satisfactory progress has been made therewith. While I cannot say definitely when we shall be producing cement at Rivervalley, or Slurry, as I presume we should now call the site of the new works, that being the not very happy choice of name by the Railway Administration for the siding there—I believe that we are fairly safe in counting on doing so

by September at latest. If this proves to be correct, we may well congratulate ourselves on the carrying out of this very considerable undertaking in so limited a period in these days, and I trust that a thought will be spared to the protecting power which keeps open the seas, and enables us to carry on our almost too normal life in this country. The new factory will increase our productive capacity by nearly two-fifths, and we are satisfied, as a result of experiments, that we shall there produce a cement fully equal in quality to that we are at present manufacturing. The further opening up of the limestone deposit preparatory to working more than confirms the favourable opinion previously formed about it, both in regard to quality and extent. You had previously been informed that we were not permitted to issue new shares for the purpose of financing this new undertaking; consequently the necessary expenditure is being met out of our own funds. Fortunately, as I pointed out last year, we had a considerable sum on hand, to which we have appreciably added during 1915 by the restriction of the last two dividends to 10 per cent. each. We propose to declare a similar amount as the dividend for the current half year, and we may thus expect if all goes well at Slurry to have fully paid for the new works this year, and to be in a position to declare an increased dividend at its close.

The distributable profit for the past year of £45,591 was arrived at after providing for all current expenses, including the loss on the dismantling of the old No. 2 works—most of the plant of which has been used at Slurry—and after paying the income tax for the 12 months preceding June 30 last. The material reduction in the profit compared with that of 1914 was due to decreased sales during the early months of the year, the lower selling prices which prevailed till August, and finally to the loss of production, through the closing of No. 2 works, which was seriously felt when demand increased, as it did greatly during the latter months of the year. Indeed, from then onwards our chief difficulty has been to cope with the orders received. We have unfortunately been compelled to refuse a large amount of new business in order to keep up supplies as satisfactorily as possible to our older customers. The Government demands, too, have increased very materially, and we have felt it our duty from every point of view to do our utmost to meet them. It is a matter of great regret, quite apart from the question of profit, that we have not been able to supply all who require our cement. In our endeavour to deliver in such a manner as to cause the least inconvenience, we had to curtail supplies to places at or near the coast, and some of our friends there have complained of our attitude in this respect, but we submit that we acted in the only reasonable way. Some one had to suffer from the shortage of local cement, and naturally it was considered that the burden of having to use the imported article could more readily be borne by those at the coast, as it is relatively cheaper to them owing to the saving on railage. With the advent of the new factory these minor troubles will, we trust, pass away. While we anticipate that we shall be able to sell all that we manufacture, the present inconvenience to the public through the shortage of supplies should be removed.

Owing to the general increase in the cost of bags, machinery spares, and other

imported stores which we require, the price of our cement was increased throughout South Africa in February, but it may be pointed out that, compared with the prices ruling just before the outbreak of war, the increase in all districts other than those quite near the coast is only 1s. per bag.

There are some signs of improvement in the business of the Concrete Construction Company.

Since we met last, Mr. Davidson, our general manager, in addition to his ordinary duties, has had to design and lay out the new factory which, thanks largely to his efforts, is now in so advanced a position and promises to give most satisfactory results as regards economical working. To him, to Mr. Bird our secretary, and to the staff generally, we are greatly indebted for the valuable services which they have continued to render us.

I now beg to move that the directors' report and the balance sheet for the year ended 31st of December, 1915, be received and adopted.

The report and accounts having been passed, the retiring directors, Messrs. H. C. Boyd, J. H. Ryan, S. Marks, C. Magge, and F. G. Lunnop, were duly re-elected and the retiring auditors, Messrs. Aiken and Carter, were reappointed. Shareholders to the value of £71,473 were represented.

CORONATION FREEHOLD ESTATES.

The annual general meeting of shareholders of the Coronation Freehold Estates, Town and Mines, Ltd., was held on the 28th of April in the board-room, Consolidated Buildings. Mr. Douglas Wilson presided.

The Chairman, in moving the adoption of the report and accounts, said:—It will be noted from the report that a very strong effort was made to reimpose the erf taxes in Balfour township, which would have involved a very heavy expenditure to your company. When last these taxes were payable your company was burdened with a payment of over £500 per annum. Your directors are pleased to report that as a result of strenuous efforts it has been decided not to reimpose these taxes in the meantime. Only one erf has been sold during the year under review, but since then a further erf has been disposed of, and negotiations are proceeding with regard to others. It will be seen from the figures before you that the expenditure for the past year only exceeded the revenue by some £2, and in view of the farm Vlakfontein No. 180 having been let from the 1st January 1916, it is expected that the current revenue will more than suffice to meet expenditure in future. For some considerable time past your company has been handicapped through not knowing the exact route taken by the South Rand railway line, which runs through Balfour township to Grootvlei, and how the erven crossed are affected thereby, and to put the matter at rest your directors have had a survey of the line made, and at the same time of the station emplacement at Balfour, and this will prove of great use in handling erven for sale.

The report and accounts were adopted. The retiring directors, Messrs. Maitland Mathern, P. C. Heaveldt and Frank Mathern, were re-elected. Mr. Edgar Wanzh was reappointed auditor.

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WRIGHT'S ROPES.

A. GOERZ & COMPANY, LIMITED.

(Incorporated in the Transvaal.)

ABRIDGED REPORT OF THE DIRECTORS.

In submitting to the Shareholders the Accounts of the Company for the year ended December 31st, 1915, the Directors state, *inter alia* :—

The Profit and Loss Account, after deducting all outgoings, shows a profit for the year of £38,602 8s. 1d. After allowing for the debit balance of £19,919 3s. 8d. brought forward from 1914, a credit balance of £18,683 4s. 5d. remains to be carried forward.

The holdings of Shares and Debentures and Sundry Participations and Interests, taken at the market prices of December 31st last, or at the Directors' valuation in cases where no market price exists, had a value in the aggregate in excess of the book cost.

The financial position on December 31st, 1915, showed an excess of cash assets, Government securities and sundry debtors over liabilities of £94,001 1s. 1d.

Our interests in Mexico remain practically unchanged.

The La Fe Mining Company has not been able to make any progress, owing to the general conditions prevailing in the Republic throughout the year having been unsatisfactory. No damage has occurred to the property, pumping has been regularly carried on, and everything is now in a good condition and ready for the restarting of operations as soon as circumstances permit.

The San Francisco Mines of Mexico, Limited, has carried out tests with the pilot plant referred to in the last Report, and the erection of a plant with a capacity of 75 to 100 tons per day has

been authorised. The necessary machinery is being accumulated at the frontier, ready for transport and erection as soon as a resumption of work is possible, but for the present operations at the mine have had to be suspended owing to the condition of the country.

The Zacatecas Syndicate has ceased to pay claim licencees on a considerable portion of the mining claims it had acquired, consisting of its less important holdings. We are also acting similarly in respect of some of the claims held by us referred to in the Report for 1913. The book cost of these is written off in the present accounts.

Mr. W. McC. Cameron, who since 1908 has been our Consulting Engineer in South Africa and before that was connected for some time with the Mining Companies of our Group, has resigned his position on the expiration of his contract. Mr. Cameron's services have been rendered with conspicuous skill and ability, and the Directors sincerely regret the loss of his services. He is succeeded by Mr. Benjamin Madew, a well-known engineer, who has had considerable experience in England and on the Rand.

The Directors retiring in accordance with Clause 74 of the Articles of Association are Mr. Joseph Temperley and Count Jean d'Ayguosives, who, being eligible, offer themselves for re-election.

The Auditors of the Company, Messrs. Price, Waterhouse and Company, and Messrs. F. W. Diamond & English, also retire, and offer themselves for re-election. The shareholders will be asked at the General Meeting to fix their remuneration.

A. GOERZ & COMPANY, LIMITED.

(Incorporated in the Transvaal.)

PROFIT AND LOSS ACCOUNT for the Year ended December 31st, 1915.

Dr.	£	s.	d.	Cr.	£	s.	d.
To Salaries of the Managing Director, of the Staffs, and of the Mining and Mechanical Engineering Departments (less fees received)	12,942	2	10	By Realised Profits on Sale of Shareholdings	30,817	14	3
„ Rent, Insurance, Rates and Taxes	4,493	1	7	„ Dividends and Interest	30,054	0	8
„ Cable, Telegraph, Telephone and Postage Expenses	709	13	7	„ Rent, Commission and Sundry Receipts	3,120	13	5
„ Travelling Expenses	380	0	0	„ Transfer and Bearer Warrant Fees	118	8	0
„ Legal Charges	107	3	3	„ English Income Tax recovered	222	4	11
„ Stationery, Printing and Advertising	885	10	9				
„ Auditors' Fees	449	15	7				
„ Charitable and other Contributions	1,123	8	6				
„ Directors' Fees	1,756	12	5				
„ Sundry Expenses	1,640	15	3				
„ Balance carried down	39,844	17	6				
	<u>£54,333</u>	<u>1</u>	<u>3</u>				
					<u>£54,333</u>	<u>1</u>	<u>3</u>

Dr.	£	s.	d.	Cr.	£	s.	d.
To Balance brought forward from 31st December, 1914	19,919	3	8	By Balance brought down	39,844	17	6
„ Written off:—							
Claim and Land Holdings	£1,068	0	5				
Office Furniture, Fittings and Vehicles	174	9	0				
	<u>1,242</u>	<u>9</u>	<u>5</u>				
„ Balance as per Balance Sheet	18,683	4	5				
	<u>£39,844</u>	<u>17</u>	<u>6</u>				
					<u>£39,844</u>	<u>17</u>	<u>6</u>

The Value of Publicity.

By GEO. W. PERKINS.

(Extracted from an Address before the Advertising Club of New York.)

For many years I have been a firm believer in the value of publicity as, in a sense, a cure-all for many of the ills in our business and political life. My first experience with publicity and its great value as a business asset was when I was connected with the New York Life Insurance Company. During my young manhood, while with the field force of the agency department of that company, the practice of all life insurance companies was to give their policyholders, their agents and the public generally just as little information as they possibly could. The idea was to conceal everything as nearly as possible, on the theory that their competitors would find out something that would be to the competitor's advantage. This practice, as a matter of fact, often led the management of life insurance companies to cover up mistakes in their internal management and accounts, and transactions that were often worse than mistakes. This practice naturally caused them to drift into the habit of doing this because under their secret practices and lack of publicity the chances were that no one would find out the mistakes and wrongdoing. The adoption of a policy of complete publicity was not only beneficial in securing new business, but it showed results at once in the financial management and every other branch of the company's affairs; for every man, in every department realised every day that his transactions were bound to become public; that the company's investments, whatever their character, must be scheduled item by item at the end of each year and exposed to the scrutiny of the entire world. I have never forgotten this experience of mine with publicity in the New York Life, and I have tried in every corporation with which I have been connected to bring about so far as one man's influence can, the same sort of public accounting. Indeed, wherever situated, whether in business or public affairs, I have endeavoured to introduce and use publicity, both as a medium of strength and protection and to advance the practical success of the undertaking. The more I have studied, worked with and seen the results of full, frank and complete publicity the more I have come to believe that it is almost a cure-all for many of our modern business ills. The subject is a very big one; but, to put it as concisely as I can, I believe that the reason why publicity in our day and generation can accomplish so much is primarily because of the intelligence and fair-mindedness of our people. I firmly believe that all that our people as a whole want or ask is a fair, square deal. They do not expect managers of business concerns or leaders of political parties to be infallible; they know they are human and liable to make mistakes; but the people want to know how their business managers and political leaders handle the affairs entrusted to them. We Americans are not afraid of things simply because they are big, provided that they are big in the open, above-board; but we are afraid of secretive, blind-pool methods. And it is largely because of secretive, blind-pool methods that our people have been afraid of large aggregates of capital under what is known as corporate control. That is why they have been afraid of legislation conducted by a small group of men in star chamber councils. From my observation, I firmly believe that in another very important respect publicity is a great cure-all, viz., in the relations between capital and labour. Secrecy, concealment, lack of information, have done more than anything else to arouse suspicion on the part of labour that all was not as fair and equitable as it should be between capital and labour. I am perfectly satisfied that labour is more than willing that capital should have a handsome return in the way of interest or dividends, but when it does not know whether that return is fair, handsome or exorbitant you cannot expect labour to be contented and free from suspicion. I believe that when a business concern becomes so large that the capital it uses is represented by more than a few people living in the same neighbourhood it should be required to furnish at least annually a complete statement of its affairs; that it should do this for the benefit alike of its stockholders, its consumers, its employees and the public generally. If this were required by law of all corporations, in place of being done as at the present time by a few corporations as a favour and because certain managers believe in it as a policy, we would be surprised at the rapidity with which many of the evils of which we complain would disappear. Publicity would accomplish what the Sherman law does not, viz., abolish false prospectuses, over-capitalisation and stock watering. Full and complete publicity would practically do away with these and kindred bad practices and crimes which are constantly recurring and for which the public has no redress at present.

A Year's Share Fluctuations.

The following table reflects last year's fluctuations in the more active South African mining shares:—

SHARE.	31st Dec., 1914.	30th Dec., 1915.	Rise or Fall.	High-est.	Low-est.
Anglo-French Explor.	13/-	3/-	11	16	7
Apex	19/9	6 7/12	19/9	3 9/16	2 9/16
Brakpan	3 7/8	1	3 1/2	5 3/8	2 3/4
Cent. Mining (£12)	6	6 3/4	3	7 1/8	5 3/4
City and Sub. (£4)	2 3/8	2 1/4	2 1/2	3 1/8	1 3/4
City Deep	2 7/8	3 5/8	3 1/2	4 1/2	2 1/2
Cons. Gold Fields	1 1/2	1	1 3/4	1 3/4	1 1/4
Do Langlaagte	1 1/2	1 1/2	2 1/2	1 3/4	1 3/4
Do. Main Reef	1	1	2 1/2	15/-	15/-
Crown Mines (10/-)	4 9/16	3 1/8	4 3/4	3 3/4	3 3/4
Daggafontein	1 6	9/3	4/9	10/3	3/-
East Rand	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
Ferreira Deep	2	1 1/2	2 1/2	1 1/2	1 1/2
Geduld	20/-	34/6	14/6	37/6	18/9
Gen. Mining & Fin.	7/-	6/6	7/6	8/6	4/-
Goerz	7/-	14/-	7/-	15/6	5/6
Gov. Areas (Modder)	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
Heriot	2 3/8	3	3 3/8	2 3/8	2 3/8
Johannesburg Con. Inv.	16/-	15/3	9	17/-	13/6
Knights	3 3/8	2 7/8	3 3/8	2 9/16	2 9/16
Knights Deep	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
Langlaagte Estate	19/3	19	20/-	15/-	15/-
Meyer & Charlton	5 8/16	5 10/16	6	4 3/4	4 3/4
Modderfontein (£4)	12 7/16	15 3/16	3 5/16	16	12 3/4
Modder B.	4 1/2	5 1/2	6 3/16	4 3/16	4 3/16
Do. Deep	2 1/2	5 10/16	2 13/16	5 10/16	2 13/16
New Goch	15/-	7 1/2	16/6	11/3	11/3
New Kleinfontein	26/9	7 4 1/2	27/6	17/-	17/-
Nigel	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
Nourse Mines	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
Rand Mines (5/-)	1 1/2	4 1/2	5 1/2	4 1/2	4 1/2
Randfontein Central	10/-	3/9	15/-	10/-	10/-
Randfontein Estate	12/6	18/9	12/-	12/-	12/-
Robinson Deep	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
Rose Deep	2	1 1/2	2 1/2	1 1/2	1 1/2
S.A. Gold Trust	16/9	3 7/12	18/-	11/3	11/3
Simmer and Jack	9/6	11 1/2	11 6/-	6/-	6/-
Springs Mines	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
Transvaal Coal Trust	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
Do. Cons. Land	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
Do. G.M. Estates	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
Van Ryn	3 3/8	2 3/8	3 3/8	2 3/8	2 3/8
Van Ryn Deep	2 1/4	2 3/8	2 1/2	1 7/8	1 7/8
Village Deep	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
West Rand Cons.	6/3	8/6	2/3	11/6	5/-
Witwatersrand Deep	2 1/2	1 7/8	2 1/2	1 7/8	1 7/8
DIAMONDS—					
De Beers Def. £2/10/-	9 7/8	10 7/8	1	12 3/8	9 1/2
Do. Pref. (£2/10/-)	12	13 1/2	1 1/2	14 1/2	11
Jagersfontein, New	3 3/8	3	3 3/8	3 3/8	2 1/2
Premier Def. (2/6)	4	4 1/2	6 3/16	3 1/2	3 1/2
Do. Pref. (5/-)	7	7 1/8	8	6 1/2	6 1/2
RHODESIANS—					
Amal. Props (4/-)	4/3	1 1/2	1 1/2	2	9
Cam and Motor	15/6	11/-	1 6	17/6	11/6
Char. B. S. Africa	12/-	10 7/12	1 1/2	13/3	7/-
Eldorado Banket	14/6	11/6	3/-	16/3	8/-
Falcon	12/6	8/9	3/9	13/9	6/-
Gaika	13/-	9/9	3/3	16/6	9/9
Giant	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
Globe & Phoenix (5/-)	1 1/2	26/9	5 1 1/2	33/9	23/6
G. Fields Rhod. Dy.	8/9	6/9	2/-	9/6	3/9
Lord & Rhodesian	7/6	7/6	11/3	5/6	5/6
Lonely Reef	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
Shaniva Mines	2 1/2	1 1/2	3 1/2	2 1/2	1 1/2
Tanganyika	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
Willoughby (10/-)	6/3	5/6	7/9	7/-	3/6
Zambesia Explor.	9/-	10/9	1/9	11/9	7/-

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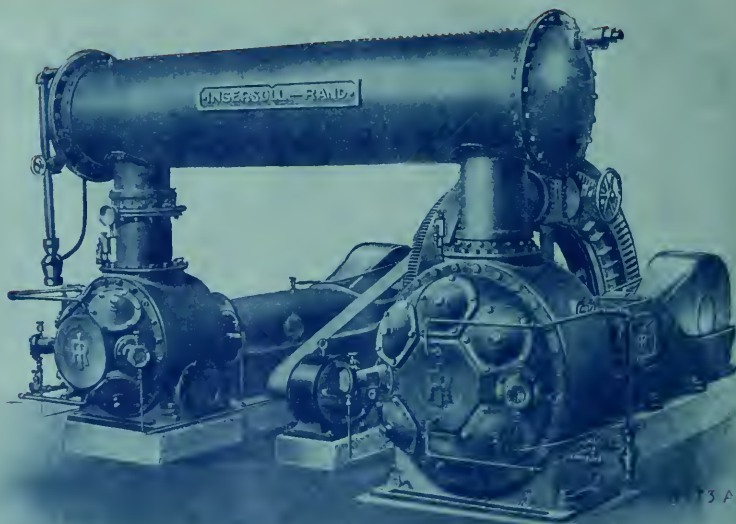
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